DIGITAL IMAGE SYSTEMS

PHOTOGRAPHY AND NEW TECHNOLOGIES AT THE DÜSSELDORF SCHOOL

[transcript] Image

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PART 0

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A PHOTOGRAPH ALWAYS LOOKS LIKE A PHOTOGRAPH, BECAUSE IT'S A PHOTOGRAPH.[1]

Thomas Ruff's tautological statement in his contribution to the catalogue of the German pavilion of the 1995 Venice Biennial implicitly polarizes a multitude of contradictory beliefs that have aspired to define photographic images. Histories and theories of photography throughout the twentieth century have been animated by the tension between photography's frequent claims to an ideal of transparency, commonly associated with a documentary rhetoric, and more pragmatic approaches that analyze images in terms of their context of emergence, their historicity or their use. Ultimately, Ruff's seemingly naive posture negates one of the strongest beliefs associated with mechanical reproduction: its often-professed truth claim. Throughout the history of the medium, the mythical relationship of the real with its depiction has been deconstructed repeatedly. John Tagg has, for instance, unequivocally noted that "the photograph is not a magical 'emanation' but a material product of a material apparatus set to work in specific contexts, by specific forces, for more or less defined purposes. It requires, therefore, not an alchemy but a history, outside which the existential existence of photography is empty."[2] Yet, despite this apparently indisputable argument, the appearance of digital technologies in photography in the late 1980s triggered a dogmatic

1 Thomas Ruff quoted in *Thomas Ruff. Andere Porträts + 3D*, exhibition catalogue (Venice Biennial, 1995), Ostfildern, Cantz, 1995, p. 17.

2 John Tagg, *The Burden of Representation. Essays on Photographies and Histories*, Houndmills/London, Macmillan Education, 1988, p. 3. Quoted in Bernd Stiegler, *Theoriegeschichte der Photographie (Bild und Text)*, Munich, Wilhelm Fink Verlag, 2010 (2006), p. 371.

theoretical response that revived what Allan Sekula once called "the folklore of photographic truth."[3] The ontological acceptance of the photographic image, based on the notion of indexicality derived from semiotics, has proven extremely resilient in responses to digital imagery: many proponents of the ongoing debate on the use of these new technologies and their implications have emphatically professed the "end of photography," in an impetus which can be subsumed under the generic label "post-photography." This phenomenon can almost exclusively be traced back to one single book – whose rupture claim is not even as radical as it may seem –, William J. Mitchell's *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, which was published in 1992.[4]

Fig. 1: Andreas Gursky, *Paris, Montparnasse*, 1993 (205 × 421 cm)

Approximately at the same time, these technologies began to be adopted among some of the first photographers to be institutionally recognized as artists. In 1987, Thomas Ruff was the first member of the so-called Düsseldorf School, a group of photographers who studied with Bernd and Hilla Becher at the Kunstakademie Düsseldorf and whose work has been repeatedly associated with a German documentary tradition, to investigate the use of computer-assisted post-production to retouch images. A few years later, Andreas Gursky and Jörg Sasse also adopted this new technical potential, which became increasingly important in the formal and aesthetic development of their work. While the digital primarily constitutes a retouching and composing tool until the mid-1990s, its use progressively fuels far-reaching transformations in the conception of photographic representation, as much technically as conceptually. Twenty-five years later, Thomas Ruff would generate images with specifically designed computer programs (e.g., the *Photograms* series, 2012). He entirely relinquishes the notion of capture from the photographic process, hence challenging the very definition of what a photograph might be.

3 Allan Sekula, "Documentary and Corporate Violence," in Alexander Albero and Blake Stimson (ed.), *Conceptual Art. A Critical Anthology*, Cambridge (MA), MIT Press, 1999 (1979), p. 360 (originally published in *Dialogue/Discourse/Research*, exhibition catalogue, Santa Barbara Museum of Art, 1979 and in an expanded version as "Dismantling Modernism, Re-inventing Documentary (Notes on the Politics of Representation)," *The Massachusetts Review*, Vol. 19, No. 4, Summer 1978).

4 William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, Cambridge (MA), MIT Press, 2001 (1992).

The investigation of these developments, which we aim to trace back in this study, resulted in an account of (historical) continuity and (epistemological) rupture. Across three decades, digital technologies undeniably transformed photographic practices and the conceptions attached to the photographic in a profound way. However, as Jonathan Crary noted in 1991, a year before William J. Mitchell argued that "photography was dead"[5] because of the transformations these new tools implied, "technology is always a concomitant or subordinate part of other forces."[6] The objective of this book lies in the investigation of some of these forces through the examination of the uses and implications of digital technologies in the work of Düsseldorf photography and through the analysis of their critical reception. Its method combines a history of discourse, a history of theories, a history of practices and a history of representations, all of which are necessary to grasp this complex object. The "Düsseldorf School" constitutes a historiographical originality. The label laid out by Isabel Graw in 1988[7] has ever since been perpetrated without critical inquiry until quite recently. Logically associated with a German documentary tradition, it has defined the reception of its proponents and considerably oriented the discourse on early uses of digital technologies by affiliated artists. While Andreas Gursky's digital montages are initially interpreted as enhanced documentaries (e.g., *Paris, Montparnasse*, 1993, Fig. 1) in which technology compensates for the limitations of the human eye, "post-photographic" images such as Nancy Burson's *Composites* (1982–1984), which was shown at the epochal exhibition *Fotografie nach der Fotografie* in 1995, are rather interpreted as the symptom of photography's lost ability to depict truthfully.[8] The appraisal of the "manipulated" aspect of their images interestingly reveals specific sets of discourse and provides distinct interpretative models. The onset of this research consequently derives from a discourse analysis, which will underlie most of its developments, and will also define the analyzed body of work. A first step in understanding the use of computers in Düsseldorf photography implies the resolution of an apparently contradictory question: Why were digital technologies decried by numerous theorists in the 1990s, while their use in Düsseldorf was either ignored or analyzed pragmatically – as if they were compositional tools like any other – and not subjected to that dogmatic stance? From this inceptive question, the digital arises not as a sheer technical tool – a perspective that is not central to our study – but as a discursive counterpoint to a documentary rhetoric that has shaped the reception of the work of the Becher School. The digital as vector of discourse therefore defines the choice of considered photographers as well: since the early 1990s, Thomas Ruff, Andreas Gursky and Jörg Sasse have extensively used digital retouching and capturing technologies

5 Ibid., p. 20.

6 Jonathan Crary, *Techniques of the Observer. On Vision and Modernity in the Nineteenth Century*, Cambridge (MA), MIT Press, 1992, p. 8.

7 Isabel Graw, "Bernhard Becher's Students," *Flash Art*, No. 143, Nov./Dec. 1988, p. 123 ff.

8 Hulbertus von Amelunxen, Stefan Iglhaut, Florian Rötzer and Alexis Kassel (ed.), *Fotografie nach der Fotografie*, Munich, Verlag der Kunst und Siemens Kulturprogramm, 1996.

and have more recently reflected upon changes in visual culture brought about by digital imaging and distribution technologies. Thomas Struth, Candida Höfer and Axel Hütte on the other hand, have hardly tested such technologies and, although their work can also be interpreted as a reflection of digital visual economies, they did not use or address them explicitly until the late 2000s.

Fig. 2: Axel Hütte, *Elfenweiher 1*, 2004 (147 × 187 cm)

This schism is significant because it reveals a stance that reflects certain beliefs that define photographic practice. For various reasons, Höfer, Struth and Hütte did not use digital retouching or capturing tools until the late 2000s – twenty years after Ruff, Gursky and Sasse started experimenting with them –, and they still predominantly photograph with analogue cameras. Axel Hütte commonly stresses his rejection of digital photography, which he claims to have never used. In 2014, he stated his case in these terms: "Photography is a medium that had been linked to the idea of being a testimony of time and place. With the digital virtual world this truth is fading away," emphasizing about his own work that "whatever you see is not produced by digital technique."[9] Within his conception of photography, the digital clearly jeopardizes the medium's truth claim and its ability to document. While central to post-photographic theories, that radical position is ignored by Ruff, Gursky and Sasse and is barely reflected as such in the discourse or the reading of their work.[10] Candida Höfer experimented with digital cameras in the late 2000s, but most of her images are taken by conventional large-format cameras. Numerous sources, such as press releases of exhibitions, stress the fact that her work

9 Axel Hütte interviewed by *Landscape Stories*, May 2014. Available at http://www.landscape-stories.net/interviews/80-2014-axel-hutte?lang=en, accessed on June 28, 2018.

10 As will be discussed extensively below, their work is paradoxically excluded from that reading and is rather associated with historical documentary forms.

"do[es] not use any form of digital enhancement,"[11] positioning her in line with the Bechers' uncompromising approach. Thomas Struth, who did not use digital editing tools until the late 2000s, is interpreted as having a "cautious" [*zurückhaltend*] approach toward them.[12] He has indeed recently created some composite photographs, such as *Space Shuttle 1, Kennedy Space Center, Cape Canaveral* (2008) based on three distinct shots, which have been digitally stitched together.[13] However, the image – part of Struth's "technological" series focusing on complex scientific facilities (e.g., the Max Planck Institute for Plasma Physics in Garching) – was digitally edited because he avowedly could not spend enough time at the Kennedy Space Center to create a satisfactory image. Moreover, Struth stresses the superior "nuance and detail" of analogue large-format cameras, compared to digital capturing devices. He only uses the latter for preparatory shots.[14]

Clearly, these three photographers express an undeniable attachment to "conventional" forms of photographic capture and are close to the Bechers' ideal of deadpan depictions. They seek to make their representations as objective as possible, and they eschew the "occult power" of the digital representation apparatus.[15] However, despite that position, the work of supporters of digital imaging and their opponents does not necessarily differ radically. An unretouched photograph and a retouched image, such as Axel Hütte's *Elfenweiher 1* (2004, Fig. 2) and Andreas Gursky's *Bangkok II* (2011, see Fig. 3),[16] may display very similar strategies and subjects – in this case, a confrontation of the reflecting qualities of a water surface with the depictive ability of the camera – in which issues related to an alleged truth claim or lost indexicality prove irrelevant. As such, the images themselves resist a differentiation, while a study of the positions commenting on them proves productive. The sets of discourses the two groups – Ruff, Gursky and Sasse on the one hand, and Höfer, Struth and Hütte on the other – might be associated with differ considerably. Hütte stated in 2013 that he does not strictly seek to "document" as he did thirty years before, but he still insists that "in all my pictures I have

11 See for example the press release of her recent exhibition at the Fondazione Bisazza in Vicenza (Italy), *Candida Höfer. Immagini di Architettura*, May 2014. Available at http://fondazionebisazza.it, accessed June 28, 2018.

12 See for example Viola Rühse, "Vom fotografischen Blue Chip zum Masterpiece der jüngeren Kunstgeschichte. Thomas Struth's Retrospektive im Düsseldorfer K20," All-Over. *Magazin für Kunst und Ästhetik*, No. 1, June 2011, p. 46.

13 See Armin Zweite, "'...a certain sense of placelessness.' Thomas Struth between Seoul, Cape Canaveral, Garching and Greifswald," in Anette Kruszynski, Tobia Bezzola and James Lingwood (ed.), *Thomas Struth. Photographs 1978 – 2010*, Munich, Schirmer/Mosel, 2010, p. 154 – 157.

14 See for example Tuesday Gutierrez, "Thomas Struth Searches for the Sublime. Photographs 1978–2010 at the Whitechapel Gallery," at momadi.com, 2011. Available at http://momardi.com/thomas-struth-searches-for-the-sublime-photographs-1978-2010-at-the-whitechapel-gallery, accessed on June 27, 2018.

15 In an article on Thomas Struth's retrospective in the Dallas Museum of Arts (2002), Daniel Birnbaum uses the expression "occult power" as a counterposition to Struth's analogue practice, borrowed from art historian Thomas Crow. See Daniel Birnbaum, "Paradise Reframed. Thomas Struth in Retrospect," *Artforum*, Vol. 40, No. 9, May 2002, p. 142 – 149.

16 Addressing the nine images of the series, the *Bangkok* catalogue states that "Gursky has clearly manipulated the photographs." See John Yau, "Looking at *Bangkok* (2011)," in *Andreas Gursky. Bangkok*, exhibition catalogue (Museum Kunstpalast, Düsseldorf, 2012), Göttingen, Steidl, 2012, p. 53.

never used the possibilities of digitization."[17] The recourse to such arguments – an aesthetic position much more than a dogmatic belief in the depiction of reality – clearly differentiates Höfer, Struth and Hütte from Ruff, Gursky and Sasse. If one admits the self-legitimizing discourse as a defining parameter of documentary practices,[18] a clear demarcation between the two "trios" emerges: although both formally re-enact documentary forms and endorse to a certain extent their rhetoric, they do so on different premises. Although visually and aesthetically similar, those two "poles" theoretically stem from opposing sets of discourse: on one hand, a reliance on the traditional objectivist paradigm of photography,[19] and on the other, an investment in self-reflexive photographic practices, freed from a strictly depictive claim. However, as will be argued throughout this research, the filiation to the first pole – and not the strict analysis through its characteristics – tends to be applied to all six photographers. In consequence, the role of these two sets of discourse in the definition of the "Düsseldorf School" ought to be clarified and the nature of their differentiation examined. Eventually, it is through their relationship to the notion of documentary that their individual and collective characteristics shall be explored.

The study of the digital thus serves as a marker to understand the broader discursive context, as much as it is used to examine the role these technologies play in specific photographers' bodies of work. It will be discussed as a discursive counterposition to the documentary rhetoric that the work of most Becher students has been interpreted by; while three pupils seemingly carry on their teachers' legacy, the three others (at least apparently) do not. Analysis of discourse and context around the examined bodies of works accordingly defines the structure of this study. While the third and fourth chapters are entirely dedicated to the analysis of the work of these three photographers – through the examination of the early use of digital tools (1987 – 1998) and the generalized absorption of digital processes and mechanisms (1999 – 2015) –, the first and second chapters approach the object of examination through "extrinsic" histories that have only been occasionally combined with the historiography of Düsseldorf. Part 1 addresses the construction of a documentary tradition, which plays a central role in the reception of Düsseldorf photography. Bernd and Hilla Becher and their students have been recurrently connected by their respective historiographies with a specifically German documentary tradition

17 Ironically, while insisting on his rejection of digital capturing tools, he stresses that in the recent images shown in Venice at the Fondazione Bevilacqua La Masa (2013), "light and shadows were edited, in order to dramatize the atmosphere." See the interview of Axel Hütte by Peter Elfers, *Salon Magazine*, 2013.

18 See especially Olivier Lugon, *Le style documentaire. D'August Sander à Walker Evans, 1920 – 1945*, Paris, Macula, 2001.

19 In photography theory, Dominique Baqué is one of the few scholars who uses the concept of "objectivist paradigm" in her book *La photographie plasticienne. Un art paradoxal* (Paris, Editions du Regard, 1998), specifically addressing the neutral, deadpan approach of the Bechers. The syntagma is primarily used in social sciences and can be understood as the counterpart of constructivist epistemologies. See for example Angèle Kremer Marietti, "La question du réalisme scientifique. Un problème épistémologique central," *Revue européenne des sciences sociales*, Vol. 40, No. 124, 2002. Available on http://journals.openedition.org/ress/575, accessed on June 15, 2018.

that stems from historical models such as August Sander, Albert Renger-Patzsch and Karl Blossfeldt. However, the discontinuous character of that filiation has to be stressed. In the 1960s and 1970s, photography as a legitimate cultural object emerges through the rediscovery of these "historical" figures and numerous foreign photographers. Their association with newly published material – such as a significant part of Walter Benjamin's writings on photography in the 1960s – leads to their inscription in the nascent historicization of photography *as an art form*. The work of a multitude of critics, publishers, collectors, magazine editors, gallery owners and historians converges in the common endeavor to recognize and establish photography, rediscovering historical figures and acknowledging contemporary photographers. In other words, the German documentary tradition that the work of the Becher students has been connected to, especially through the late 1990s, did not exist as such before the 1970s.

Fig. 3: Andreas Gursky, *Bangkok II*, 2011 (307 × 237 cm)

In 1979, the exhibition *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie*[20] gathers several pupils of the Bechers and thus constitutes a key moment in the legitimation process of a specifically German photography tradition. Based both on documentary forms and theories stressing the role of authorship, it is inspired by French film theory and by Beaumont Newhall's endeavor to establish photography as art at the Museum of Modern Art in New York. As such, this contextual field constitutes the condition of possibility of the Düsseldorf School, a "neue Neusachlichkeit"[21] legitimized through its newly built historical filiation. To give only one example of this activity, it is

20 *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie*, exhibition catalogue (Rheinisches Landesmuseum Bonn, 23.06.–29.07.1979), Cologne, Rheinland Verlag/Bonn, Rudolf Habelt Verlag, 1979.

21 The terminology is used by Martina Dobbe. See Martina Dobbe's chapter on "Neue Neusachlichkeit," in *Bernd und Hilla Becher. Fachwerkhäuser*, Siegen, Museum für Gegenwartskunst Siegen, 2013 (2001), p. 53 – 71.

noteworthy that in 1973, Volker Kahmen was the first to visually confront August Sander and the Bechers' work in one of the earliest German books on the history of photography as art, *Fotografie als Kunst* (Fig. 4). This precedent will provide the formal and aesthetic model – defined by a neutral, frontal and deadpan depiction – through which the Becher students' work will be primarily analyzed. The main intent of this examination therefore lies in understanding the contextual field through which Düsseldorf photography is commonly interpreted.

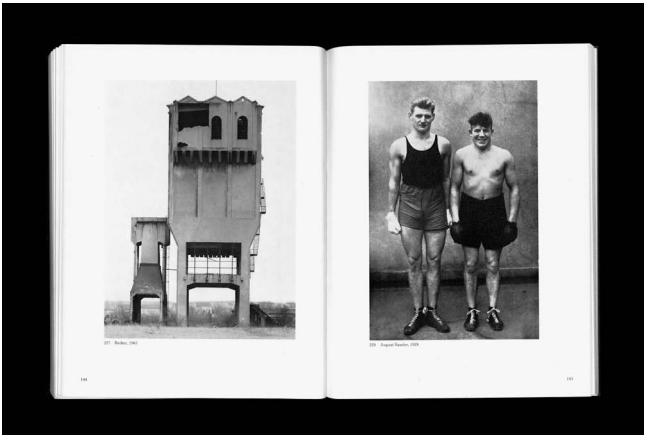

Fig. 4: Juxtaposition of Bernd and Hilla Becher and August Sander in Volker Kahmen, *Die Fotografie als Kunst*, 1973, p. 144 – 145

The documentary rhetoric acts as a counter-model to the reception of the appearance of digital post-production tools, the former being rather associated with truthfulness and verisimilitude and the latter with manipulation or painterly effects. That opposition influences the reception of Düsseldorf photography, as their proponents' images are usually not considered "manipulated." Between these two histories, hardly any circumstantial fact sustains an explicit connection. The Düsseldorf example is not discussed by post-photographic theories. And the privileged illustrations of these theories primarily revolve around the representation of manipulated bodies, which often explicitly reveals the retouched nature of the images. As has been increasingly pointed out by scholars in recent years, the post-photographic theoretical "movement" is not a homogeneous entity, and the rupture claims it sustains are far more complex than a simple rejection of digital tools.[22] Its analysis in relation to post-photographic imagery further complicates its comprehension: although the theoretical discourse often expresses a fear of the loss of photography's truth claim, and although the label "post-photographic," with which artistic projects are tagged, reflects that apprehension, all reactions are not

22 See especially Martin Lister, "Photography in the Age of Electronic Imaging," in Liz Wells (ed.), *Photography. A Critical Introduction*, New York and London, Routledge, 2004 (1996), p. 295 – 336 and Bernd Stiegler, *Theoriegeschichte der Photographie*, chapter "Die digitale Fotografie," op. cit., p. 403–422.

negative. The artists featured at the *Fotografie nach der Fotografie* exhibition, for example, are associated with this discourse of rupture, which they often do not – either explicitly or implicitly – endorse.

Fig. 5: Andreas Gursky, *Rhein I*, 1996 (185.4 × 221 cm)

The author's examination of the theoretical field of post-photography and its confrontation with the work of post-photographic artists in German editorial and curatorial projects consequently seeks to establish that this discursive field polarized the reactions toward new technologies. If digital retouching was not acknowledged in Düsseldorf, it was partially due to the documentary inscription of the Becher School but also to the fact that overtly manipulated post-photographic imageries were interpreted as the logical result of the appearance of digital technologies. As such "post-photography," whose visual outcome blatantly displayed its manipulated nature, logically illustrated the end of photography, while the verisimilitude of Düsseldorf photographers' production could be interpreted within the lineage of a documentary tradition. The methodological difficulties deriving from that comparison are twofold. On one hand, we have to cope with a reception of Düsseldorf photography that does not necessarily mention digital retouching – a stance whose implications are difficult to trace. On the other, we have to evaluate theoretical idiosyncrasies that impacted the reception of post-photographic images but that didn't affect the interpretation of Düsseldorf photography. However, comparison of the discourse on the digital and the documentary – both associated with specific characteristics of photographic representation (such as claim for objectivity vs. overt manipulation and construction vs. verisimilitude, etc.) – and their confrontation with concrete images eventually reveals various visual and discursive points of convergence.

Another paramount precondition for the understanding of Düsseldorf photography – which constitutes part 2 of this research – is rooted in the 1960s and 1970s. The formal and conceptual positions that brought about the convergence of the Bechers' work with conceptual

and photo-conceptual art establish most key processes underlying the work of the young generation of Düsseldorf photography. Serial imagery, comparative mechanisms, grid structure, typologies, permutations, frontality and single-image autonomization have – via the reinterpretation of the protocoled depiction established by the Bechers – considerably shaped the work of the Düsseldorf School. The use of serial image constructions in the work of Sol LeWitt, Ed Ruscha, Ana Mendieta and Mel Bochner reflects conceptual interrogations of codification systems (e.g., language, numbers and photography). In the photographic context, this stance is translated by a systematic and mechanical depiction of the world. While these generative processes formally and conceptually converge with early computer art, their experiments ultimately address the status of images altogether: the autonomy of the single image produced by serial mechanisms eventually leads to the understanding and conceptualization of photographs as autonomous images, rather than as depictions. Thomas Ruff's statement that "a photograph always looks like a photograph, because it's a photograph" not only produced self-reflexive experiments acknowledging such a claim but ultimately also altered the very conception of photographic depiction, whose point of reference is no longer a physical reality.

The second part of the book addresses the production realized in a digital context. Part 3 and 4 reflect two distinct phases in the history of Düsseldorf photography: the period of the emergence of digital tools (1987–1998) and the generalization of digital aesthetics (1999 – 2015). In the period of the emergence of retouching and composing tools, the strategies of Thomas Ruff, Andreas Gursky and Jörg Sasse can be interpreted as an attempt to posit their images *as* images rather than depictions, re-enacting processual and comparative mechanisms shared with the Bechers. Jörg Sasse digitally manipulates found imagery to stress the contingencies of digital formats and compression algorithms (i.e., the *Tableaus* series) and makes their digital origins visible. Andreas Gursky's photographs progressively shift toward two-dimensional images whose generic nature is emphasized through his compositional strategies. In this period, Thomas Ruff creates various mostly non-digital series (the *Häuser* and the *Porträts*) whose large formats and ensuing "de-realization" effect seemingly reject any relationship with the depicted object. Although the three artists proceed differently, their work expresses mechanisms already present in Bernd and Hilla Becher's typologies. Through the investigation of the resilience of frontal construction, grid patterns and comparative mechanisms in the work of the younger generation, it appears that although the strictly serial or typological components are absent, all three reactivate the main formal and conceptual contingencies of the Becher protocol. Focusing on single, large format images, they transpose the typological character *within* their photographs, their work being hardly ever conceived as a series intended to be visually confronted. The grid structure of Andreas Gursky's *Paris Montparnasse* (1993), for example, re-inscribes comparative processes *within* the single image. The reception of their work commonly associates

them with documentary forms. Ruff's images are assessed as documentary *despite* the use of retouching tools, while Gursky's ability to document is even perceived as enhanced by digital tools. The case of Jörg Sasse is perceived quite differently, as his work is commonly associated with a painterly tradition, and the overt digital nature of his *Tableaus* is usually not reflected upon.

Fig. 6: Digitally stretched version of *Rhein I*, equivalent to *Rhein II*

In the period of the generalization of digital aesthetics (1999–2015), the use of such technologies in Düsseldorf photography reflects their growing assimilation by the broader public. The wide-ranging impact of image circulation through the Internet leads Thomas Ruff to interrogate these new visual economies by appropriating low-resolution images on the web. The *nudes* series initiated in 1999 marks a shift in the use of digital technologies in Düsseldorf, as it visually enacts its digital nature and its condition *as image*; the digital becomes at that point the object of investigation with multiple implications (circulation of photography on the web, spectatorship, visual culture, etc.), transcending its former status as a technology primarily used as a retouching tool of photographic images. During that period, Andreas Gursky further shifts toward generic digital imagery by completely building images with photographic fragments. On a technical and compositional level, the late 1990s mark an important shift in his oeuvre: *Rhein II* (1999), is a digitally stretched version (Fig. 6) of *Rhein I* (1996, Fig. 5), a painterly view of the Rhine in Düsseldorf, in which most elements (e.g., buildings) had already been digitally erased by the artist. While the first version was heavily retouched already (the post-production massively intervened in the photographic depiction), *Rhein II* was entirely computer "generated:" the picture was stretched horizontally and was not – as it has often been argued – created from two distinct photographs. Besides the formal-aesthetic transformations of his work, the increasingly complex uses of these tools also reflect a new relationship toward photographic sources. From the late 1990s, Düsseldorf photography progressively addresses serial mechanisms within image *systems*, rather than in single images. Gursky increasingly generates generic images based on his recurrent grid

structure, which depict globalized activities or symptoms (advertising, architecture, Formula 1, etc.) and inscribe his imagery into a global image circulation system. In his project *Speicher* (2008), a physical database whose core articulation resides in the defining mechanisms of computing, Jörg Sasse questions this notion even more explicitly. Ultimately, through the correlation between the preconditions of the Düsseldorf School and the evaluation of the work of its proponents, we aim to explore in detail the role digital technologies have played in the strategies of Jörg Sasse, Andreas Gursky and Thomas Ruff individually. Concomitantly, through the use of the Becher protocol as an analytical framework, the aim of this study is to address the broader context in which these developments took place.

A FRAMING THE DÜSSELDORF SCHOOL

The commonly used terminology "Düsseldorf School" or "Becher School" proves extremely resilient in the historiography of this subject. It is not our aim here to systematically examine its history. However, the importance of the reception of its proponents calls for a rapid survey of this phenomenon, as that label has considerably impacted the perception of digital works. Except for the mention of a geographical, historical or circumstantial link to the Kunstakademie Düsseldorf or the Bechers as inspirational or tutorial figures, there has been no relevant argument allowing a stringent definition of what has always been considered a "group," at least nominally. Until very recently, the existence of this so-called school was commonly assumed, disregarding the fact that it had until very recently not been systematically studied. These historiographical circumstances are even more singular considering that even the lack of delineation has never been noticed, much less re-evaluated, until recent years. The "Düsseldorf School," "Becher School" or "Düsseldorf School of Photography" has become such a persistent label that it seemed unnecessary to provide a rigorous definition of its formal specificities or its history. Only recently, several scholars have begun to question explicitly the very idea of Düsseldorf photography as a coherent entity. In an exhaustive overview of the Düsseldorf phenomenon, Stefan Gronert is one of the first to point out the fragility of the very idea of a "Becher School." "Spontaneously identifiable" but also provoking "frowning,"[23] the notion is here primarily associated with a place of production and an educational

23 Stefan Gronert (ed.), *Die Düsseldorfer Photoschule*, Munich, Schirmer/Mosel, 2009, p. 13. The texts in German have been translated by the author, if not mentioned otherwise.

institution. It is thus mainly, but not exclusively, connected with the Becher class and brings together photographers who wouldn't necessarily have been associated if they hadn't studied together.[24]

This uncertainty as to what actually constitutes the "Düsseldorf School" has an immediate impact on the composition of its body of photographers, probably the most evident symptom of this indeterminacy. In the various publications and exhibitions addressing Düsseldorf photography, the body of photographers associated with the city or the school thus varies considerably. It commonly ranges from a small number of star photographers to a much wider group of photographers somehow connected to the city or the Kunstakademie. The scope sometimes even extends to commercial photography or artistic production only remotely connected to the artistic practices and aesthetic features commonly associated with Düsseldorf. The aim of this study is not to conduct an exhaustive analysis of the patterns that have led scholars and curators to establish those discussed compositions. Rather, we will concentrate on the variations of those selections and the reasons invoked to decide upon them. Ultimately, we aim to show that the notion of a school is far from being established and that those editorial projects reveal fundamental differences of definition, as much in the features brought forth supposedly defining the school as in the photographers involved therein.

According to Stefan Gronert, the term "Becher School" was introduced "officially" in the fall of 1988 at the Johnen + Schöttle Gallery in Cologne, at the exhibition *Klasse Bernd Becher*, displaying works by Andreas Gursky, Candida Höfer, Thomas Struth, Thomas Ruff and Petra Wunderlich.[25] A review of the exhibition written by Isabel Graw for *Flash Art*[26] considerably contributed to the widespread acceptance, internationally, of the term. One of the earliest academic publications in which the idea of a school arises is Helga Meister's *Fotografie in Düsseldorf. Die Szene im Profil*[27] from 1991. This early project addresses Düsseldorf photography as a whole, the "Düsseldorf School of Objective Photographic Art,"[28] an early denomination for the "Düsseldorf School," only being here a subcategory among a very heterogeneous body of photographers with various connections to the city. Overall, the publication includes the images of fifty-two photographers. Surprisingly, this book is rarely mentioned in studies about Düsseldorf photography, showing that a consequent historiography still has to be established. Even more surprisingly, the author concentrates on the often neglected circumstances that led to the importance of Düsseldorf as a center for photography. And even though Meister emphasizes the fact that it is too early to conduct an exhaustive study of Düsseldorf photography, she suggests the key points required for a study of this subject – the role of the school and the teachers, the

24 Ibid.
25 See Stefan Gronert, op. cit., p. 14.
26 Isabel Graw, "Bernhard Becher's Students," op. cit., p. 123 ff.
27 Helga Meister, *Fotografie in Düsseldorf. Die Szene im Profil*, Düsseldorf, Schwann im Patmos Verlag, 1991.
28 "Düsseldorfer Schule der objektiven Fotokunst."

importance of the cultural environment, the proximity and importance of the advertising industry (photographers, technical aspects, companies) and the role of nearby institutions and galleries – sketching out what seems, in a cultural-historical effort to capture this phenomenon, a relevant introduction. Despite a methodologically stringent approach, mentioning the early date of such a study and the fact that many protagonists were, in fact, not in contact at all, Meister proposes a starting point for a comprehensive study of the phenomenon that only few scholars have reflected upon. The photographers she classifies as part of the "objective photographic art" – a definition directly derived from the Bechers' doctrine – clearly share obvious aesthetic features. At that time, more than at any other, the students of Bernd Becher could be considered a coherent group. The aesthetic consistency and the recurrence of photographed subjects are indisputable. Apart from the Bechers themselves and the aforementioned superstars, Meister includes in this list Boris Becker, Andi Brenner, Ulrich Gambke, Axel Hütte, Manfred Jade, Simone Nieweg, Tata Ronkholz, Jörg Sasse and Petra Wunderlich. If many have over the years acquired a status almost as important as the four stars (Axel Hütte, Simone Nieweg, Jörg Sasse and Petra Wunderlich), some (Boris Becker, Ulrich Gambke, Andi Brenner) are barely mentioned in other studies or had only limited significance in the constitution of the "Düsseldorf School." It is only lately that they reappeared in major publications on the subject: the recent *Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography* exhibition organized by the NRW Forum Düsseldorf in 2010, tends to suggest a re-evaluation of the whole concept, which is reflected in the choice of the photographers associated with Düsseldorf. [29]

Rupert Pfab, author of the first published dissertation on the subject, noticed in 2001, that it is surprising that there is no "comprehensive academic study" of the relationships of the students of Bernd Becher with one another and of the relationship between teachers and students, despite the numerous essays and exhibitions covering those photographers.[30] His doctoral thesis at the Freie Universität Berlin (1999) enlightens readers regarding many aspects of the "Düsseldorf School," addressing various thematic aspects (portraits, street photography, "abstract" pictures, etc.) and series (e.g., Thomas Struth's *Museums Photographs*) of the younger generation. He also analyzes the role and work of prominent teachers of the Kunstakademie (Bernd and Hilla Becher, Gerhard Richter, Joseph Beuys, Nam June Paik, etc.). In the introductory chapter of his book,[31] he states that Candida Höfer, Axel Hütte, Thomas Struth (first class of Bernd Becher), Andreas Gursky and Thomas Ruff (later class of Bernd Becher) are the "object" of his study. Pfab legitimates his selection with their "consistent work series" with "art historically relevant themes," their "international

29 Werner Lippert and Christoph Schaden (ed.), *Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography*, exhibition catalogue (NRW-Forum Düssedorf, 2010), Düsseldorf, Schaden, 2010.

30 Rupert Pfab, *Studien zur Düsseldorfer Photographie. Die frühen Akademieschüler von Bernd Becher*, Weimar, VDG, 2001, p. 16.

31 Ibid., p. 11, "Gegenstand, Zielsetzung und Methode" (object, objective and methods).

consideration" and their presence in leading exhibitions like the Kassel *documenta* or the Venice Biennial.[32] However, while he unquestionably chooses major figures, he fails to provide the reader with an explanation as to why those photographers were selected while others were discarded. Elger Esser, Laurenz Berges, Jörg Sasse or Petra Wunderlich, often seen as major figures among the group (if somehow less famous than the stars) are not included, and their work or role is hardly mentioned. The first study that supposedly addresses the "Düsseldorf School" as a phenomenon rather than as a sum of individuals thus fails to bring forth a relevant definition of one of its major feature: its very members.

Since 2001, several major publications have addressed the subject thoroughly. However, if we consider the proliferation of publications and exhibitions of individual photographers or group shows – Thomas Ruff's images have been displayed in several hundred catalogues[33] –, it is noteworthy that there still is a surprisingly low number of surveys of the subject. Critical debate about the very idea of a school or group, the relationships among the Bechers and their students or among the students themselves remains scarce. And if we examine the constitution of the various compositions of the Düsseldorf School in those publications, we notice a surprising variety. The arguments – or the lack of arguments in some cases – invoked to establish those selections show the fragility of the whole concept of a school.

Heute bis jetzt,[34] a two-part exhibition held at the Museum Kunst Palast Düsseldorf in 2002, suggests no less than thirty-four photographers, most of whom had, at one point or another, visited Bernd Becher's class at the Kunstakademie. The introductory text from the exhibition catalogue, also written by Rupert Pfab, uses the term "photography from Düsseldorf" or "Düsseldorf photography,"[35] rather than "School of Düsseldorf" or "Becher School." The author seems to overtly avoid the imprecise concept of a school, considering a wide spectrum of photographers, engaging with a broad phenomenon rather than addressing a homogenous object. However, while the term school is now avoided, the definition of photographic practice in Düsseldorf is still connected to the features commonly associated with the concept of a school or group. Most photographers presented here seem to have a connection to the Kunstakademie, the Bechers or the city, with an emphasis, as Pfab argues, on the role of large-format photography, its format specific content and the importance of context in museum exhibitions.[36] Even though Pfab avoids the commonly used label and seems to open up the spectrum of photographers, the pervasive model, which presupposes a connection between them, implicitly prevails.

32 Ibid.

33 Ruff's 2012 monograph already lists more than four hundred books and exhibition catalogues (group and solo shows). See *Thomas Ruff. Works 1979 – 2011*, exhibition catalogue (Haus der Kunst, Munich, 2012), Munich, Schirmer/Mosel, 2012, p. 259 – 266.

34 Rupert Pfab (ed.), *Heute bis jetzt. Zeitgenössische Fotografie aus Düsseldorf (Teil 1 and 2)*, exhibition catalogue (Museum Kunst Palast, Düsseldorf, 2002), Schirmer/Mosel, cop. 2002.

35 Ibid., p. 11 – 24. " Düsseldorfer Photographie" or " Photographie aus Düsseldorf " are used.

36 Ibid., p. 17.

Objectivités,[37] the exhibition held at the Musée d'art moderne de la Ville de Paris from 2008 to 2009 displays, along with works of the stars and their teachers, works of Laurenz Berges, Elger Esser, Axel Hütte, Simon Nieweg, Jörg Sasse and Petra Wunderlich, who are commonly considered important figures of the movement. However, it also shows images of Lothar Baumgarten, Hans-Peter Feldmann, Klaus Mettig, Sigmar Polke, Gerhard Richter, Ursula Schulz-Dornburg, Katharina Sieverding and Beat Streuli, whose association with the most famous students of the Bechers is less common. Gerhard Richter and Hans-Peter Feldmann, as teachers or inspirational figures of the same generation as the Bechers, are often invoked but are usually not assimilated to the "Düsseldorf School" itself. They clearly embody a similar role to the Bechers at the Kunstakademie and might have had as much impact on their students as their photography teachers. This aspect, also, has yet to be fully explored. The presence of Beat Streuli and, even more so, Sigmar Polke, is rather uncommon, considering their remote relationship to Düsseldorf photography.

In 2009 Stefan Gronert's *Die Düsseldorfer Photoschule*[38] directly approaches the problems of definition inherent in most academic studies. In his introductory essay, the author points out the fragility of the methodological approach of the concept of a school. He questions less the potentialities of such a phenomenon, which he compares to analogue situations like the "Helsinki School" or the "Vancouver School"[39] than the lack of a consistent study of its mechanisms. The presence of a probably "unique" density of museums and galleries of international importance and of the now well-known Grieger laboratory, besides the undoubtedly excellent quality of the education at the Kunstakademie, provides the city with excellent predispositions for the emergence of a group, school or movement.[40] Gronert's establishment of a body of photographers accordingly allows a certain vagueness. He doesn't pretend to provide a wide or exhaustive overview of all Becher students, or of those photographers who have studied at the Kunstakademie in the 1970s or 1980s (some internationally important figures like Thomas Demand or Katharina Sieverding are excluded from his selection), and he rejects short-time Becher students (e.g., Lois Renner) or "hybrid forms" of photographic imagery (Sigmar Polke or Gerhard Richter), concentrating solely on the Bechers, Laurenz Berges, Elger Esser, Andreas Gursky, Candida Höfer, Axel Hütte, Simone Nieweg, Thomas Ruff, Jörg Sasse, Thomas Struth and Petra Wunderlich. Interestingly, the book shows a fairly small number of early photographs, thus exemplifying a heterogeneous character of the body of images rather than the coherence Düsseldorf photography is commonly associated with.

37 Maria Müller, Armin Zweite and Fabrice Hergott (ed.), *Objectivités. La photographie à Düsseldorf*, exhibition catalogue (Musée d'art moderne de la Ville de Paris, 2008 – 2009), Munich, Schirmer/Mosel, 2008.

38 Stefan Gronert, op. cit. English edition: Stefan Gronert (ed.), *The Düsseldorf School of Photography*, New York, Aperture, 2010.

39 Stefan Gronert quotes Jean-François Chevrier on that particular matter. Ibid., p. 14.

40 Ibid., p. 15.

The catalogue of the exhibition of the Schirmer collection, held at the Bayerische Akademie der Schönen Künste in Munich between November 2009 and February 2010 declares, in its introductory essay,[41] that the "homogeneity of artistic positions that the label Düsseldorf School of photography suggests does *de facto* not exist."[42] The main prerequisite to the existence of a "school," which Ulrich Pohlmann underlines, is the teaching role of Bernd Becher, "supported" by his wife. Although he looks to the *Objectivités* and *Die Düsseldorfer Photoschule* catalogues for insight on historical developments of the movement, he also highlights one fundamental point whose importance is rarely pointed out: the role of Schirmer/Mosel editors in the establishment of Düsseldorf photography in the artistic context. The selection of exhibited photographers is the same as Stefan Gronert's, except for the presence of Ulrich Gambke, a student of the Bechers (1990 – 1993) hardly ever mentioned in the literature on the subject, except in the early *Fotografie in Düsseldorf. Die Szene im Profil* (1991).[43]

Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography, an exhibition organized by the NRW Forum Düsseldorf in 2010, is claimed, in the introductory text of its catalogue, to be the first project to explicitly link the Bechers and their students to Stephen Shore's *New Color Photography*, thereby suggesting a new angle to define Düsseldorf photography. The various essays constitutive of the catalogue address key questions concerning the existence and the definition of what the "Düsseldorf School" might be. Maren Polte specifically investigates the terminology issue mentioned earlier and the relationship between teachers and students and among students themselves.[44] She retrospectively highlights incoherencies in the establishment of a consistent body of photographers, labeled Becher students, but who often have not even studied together or been in contact. When Andreas Gursky began his studies at the Kunstakademie, for instance, Thomas Struth had almost finished his.[45] Of course, those described circumstances do not necessarily question the idea of a school. However, they do constitute historiographical evidence for the labeling phenomenon, which tends to establish a denomination without producing a proper analysis of its characteristics. A further element we ought to mention here, which doesn't derive directly from the historiographical analysis because of its absence, is the omission of several photographers who seem to share common influences from American landscape photography and share aesthetics and interest for industrial architecture and its impact. Important figures such as Michael Schmidt, Joachim Brohm, Heinrich

41 Ulrich Pohlmann, "Arbeiten der Düsseldorfer Photoschule aus der Sammlung Lothar Schirmer," in *Die Düsseldorfer Schule. Photographien aus der Sammlung Lothar Schirmer*, exhibition catalogue (Bayerische Akademie der Schönen Künste, Munich, 2009/2010), Munich, Schirmer/Mosel, 2009, p. 11 – 16.

42 Ibid., p. 11.

43 Helga Meister, *Fotografie in Düsseldorf. Die Szene im Profil*, op. cit.

44 Maren Polte, "'Becher Disciples,' 'Becher School,' 'Düsseldorf Photography School.' Approaching Terminological Definitions and Perspectives on a Phenomenon," in Werner Lippert and Christoph Schaden (ed.), *Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography*, op. cit., p. 271 – 291.

45 Ibid., p. 272.

Riebesehl, Manfred Hamm or Wilhelm Schürmann are hardly ever associated with the photographers of the Düsseldorf School, despite obvious connections in the depicted objects, in the formal construction of their images and in a common socioeconomic and cultural context. When Klaus Honnef gathered several young German documentary photographers in the Rheinisches Landesmuseum in Bonn in 1979, in an exhibition called *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie*,[46] he framed a wider documentary movement, one that exceeds the sole label "Düsseldorf School." In an attempt to address the aesthetic features of German documentary photography,[47] consistent with his reflections on author photography (*Autorenphotographie*), Honnef exhibited images of some of the Becher students[48] – Candida Höfer, Axel Hütte, Tata Ronkholz and Thomas Struth – along with the work of photographers such as Michael Schmidt and Heinrich Riebesehl. In 1979, German documentary practice wasn't necessarily – or exclusively – connected with Düsseldorf. However, historiographical developments later produced a coherent body of photographers, with a common educational, cultural and institutional context, which eventually became paragon for this type of photographic practice. More recent studies, however, begin to re-question the persistent categorization, which has brought forth the idea of a "Düsseldorf School" and has allowed the emergence of formerly disregarded photographers.

The intent of this study does not lie in the examination of those historiographical developments or those overlooked photographers in detail. Our aim is merely to survey various elements that show the proximity of the work and practice of those photographers with the Becher students. Michael Schmidt, teacher at the Werkstatt für Fotografie of the Volkshochschule Kreuzberg, has multiple ties, contextual and aesthetic, with some of the Becher students. He sent Andreas Gursky, who incidentally mentions him as one of his major influences,[49] to the Kunstakademie Düsseldorf. His early work bears striking resemblance and similar approaches to the characteristic style of early Düsseldorf photography (1975 – 1985). The urban views of his *Berlin-Wedding* (1976 – 1978) or the *Berlin Stadtbilder* series (1976 – 1980) share with Thomas Struth's architectural series from the same period an interest in urban views, typography in urbanized spaces, repetitive pattern effects in the structure of popular housing; but they also share a formal approach with similar points of view, angles and construction, the use of low contrast and uniform gray skies

46 *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie.* op. cit.

47 Letter from Klaus Honnef to Tata Ronkholz, 1 March, 1979, Tata Ronkholz Estate, Cologne, unlisted, quoted in Christoph Schaden, "To Be Sure, That Is Also the Expression of a Particular Vital Consciousness. On the Reception of Stephen Shore's Work in Germany 1972 – 1995," in *Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography*, op. cit., p. 49.

48 Bernd Becher, who was a friend of Klaus Honnef, called him to submit the work of his students for the exhibition. Klaus Honnef in conversation with Regina Wyrwoll, January 2009, in Wilhelm Schürmann and Klaus Honnef, *Energien/Synergien 9*, Cologne, 2009, p. 93 and 96. Quoted in Maren Polte, "'Becher Disciples,' 'Becher School,' 'Düsseldorf Photography School.' Approaching Terminological Definitions And Perspectives on a Phenomenon," op. cit., p. 278.

49 Interview in *Monopol*, No. 3, March 2009, p. 73.

and black and white depiction. Interior family portraits recall Thomas Ruff's, Candida Höfer's or Thomas Struth's own in their frontal static construction, the subject engaging the observer, although Schmidt's images are in black and white. Furthermore, it is the depiction of the industrial architecture of the Ruhr and its topographical and social consequences, epitome of the Bechers work, which also connects him with Düsseldorf. Interestingly, Thomas Ruff doesn't associate Schmidt with Düsseldorf, even though he thinks of him as an important German photographer.[50] For instance, his series from the 1980s, for example, *Waffenruhe* (1985 – 1987), clearly differ from the production of the Bechers' pupils. However, as stated earlier, it seems that Düsseldorf photographers only shared common subjects and aesthetics until the mid-1980s. Even if obviously Schmidt didn't study at the Kunstakademie and he belongs to another generation, he could have been associated with Düsseldorf, but unlike Beat Streuli or Sigmar Polke in the Parisian *Objectivités* exhibition, he wasn't.

Manfred Hamm also has potential ties with Düsseldorf photography – for example, through his interest in industrial architecture. His work, similar to the Bechers' until the late 1960s, is not associated with an explicitly artistic practice. Rather, it is published in architectural-specific literature where the fascination in the depicted object soon becomes apparent and shows an approach very different from the Bechers' students. The introductory essay of *Bahnhöfe*,[51] a study of railway stations worldwide, mentions "marvels of technology and architecture" or "cathedrals," which leaves little room for interpretation about the real emphasis of the project. If some images clearly show an aesthetic approach antinomic to Düsseldorf photography in the same period – high contrast black and white pictures with theatrical effects, as for example the Frankfurt am Main station[52] –, many others show interesting points of correlation with Düsseldorf architecture photography (black and white and color): central and raised point of view, neutral lighting and similar formal constructions. From *Denkmäler einer Industrielandschaft* (Nicolai Verlag, 1978) to *Sterbende Zechen*[53] (Nicolai Verlag, 1983), Hamm produces a typological survey of industrial structures, in an attempt similar to the Bechers to create an archive of disappearing architecture.

Joachim Brohm's status in the history of photography seems to be linked with the publication by Steidl of his early 1980s Ruhr pictures[54] in 2007 and the outcome of his studies at the Department of Photography and Cinema at the Ohio State University with Professor Allan Sekula in 1984, *Ohio*.[55] As it seems, Brohm had been largely disregarded by historians and critics, despite having several group

50 Jörg M. Colbert, "A Conversation with Thomas Ruff," commissioned by *American Photo*, March 2008. Available on http://jmcolberg.com/weblog/extended/archives/a_conversation_with_thomas_ruff, accessed on January 10, 2018.
51 *Manfred Hamm. Bahnhöfe*, Berlin, Nicolai, 1984.
52 Ibid., p. 49.
53 Dying coal mines of the Ruhr region.
54 *Joachim Brohm. Ruhr*, op. cit.
55 *Joachim Brohm. Ohio*, op. cit.

exhibitions in important institutions.[56] However, his *Ruhr* series, photographed between 1979 and 1983 and eventually published twenty-five years later as an exhibition catalogue of the Albers Museum Quadrat in Bottrop, shares plenty of features with early Düsseldorf photography that have hardly ever been examined. While *Ohio* clearly shares formal qualities with a key figure in the constitution of contemporary German photography – Stephen Shore – *Ruhr* reveals another feature central to German photography: the documentation of the industrial legacy of a whole region, which not only adheres to traditions of German photography (from Albert Renger-Patzsch to the Bechers) but also connects with similar undertakings in the United States.

According to Heinz Liesbrock's extensive study[57] on the influence of New Color Photography[58] on their German counterparts, Joachim Brohm, Heinrich Riebesehl and Michael Schmidt are among the first European photographers to reflect upon American color photography, adapting a formal approach to their own sociocultural environment. Exhibitions like the paradigmatic *New Topographics. Photographs of a Man-Altered Landscape* at the George Eastman House in Rochester in 1975, which has become the epitome of documentary photography, or the less known *The Second View: The Rephotographic Survey Project*,[59] an attempt to re-photograph famous American nineteenth-century landscape images from the same point of view, revealing as much the transformation of the landscape as the relationship of the photographer to the depicted object, played a central role in the constitution of German documentary photography. The discovery of American landscape photography, contemporary but also anterior, became central to German photographic practice. From the fascination for a seemingly untouched and boundless environment, the focus had shifted to a critical approach to the reckless use of resources,[60] a phenomenon that found a strong echo in Germany as well. However, while there is a critical component to American landscape photography and to its German counterpart, neither seems to be predominantly political or ideological, as some have stated.[61] Formal aspects – the discovery of color images, the vernacular snapshot aesthetics and a focus on trivial subjects – clearly played a central role in the development of those practices. This new approach, embodied by the opposition between man-made structures and the natural environment, has a seductive character; media theory would explain it through the shift from the industrial to the electronic age,[62] a phenomenon explicitly conceptualized by Bernd and Hilla Becher.

56 He participated in the *Reste des Authentischen* exhibition at the Folkwang Museum Essen in 1985.
57 Heinz Liesbrock, "Topografien des Anonymen. Joachim Brohm's Fotografien *Ruhr*," in *Joachim Brohm. Ruhr*, op. cit.
58 Sally Eauclaire's study *The New Color Photography* (New York, 1981) constitutes one of the earliest occurrences of the now acknowledged label. See Heinz Liesbrock, "Topografien des Anonymen. Joachim Brohm's Fotografien Ruhr," op. cit., footnotes 28 and 30.
59 *The Second View. The Rephotographic Survey Project*, Albuquerque, University of New Mexico Press, 1984.
60 Heinz Liesbrock, "Topografien des Anonymen. Joachim Brohm's Fotografien *Ruhr*," op. cit., p. 19 – 21.
61 For the American context see for example Greg Foster-Rice and John Rohrbach, *Reframing the New Topograhics*, Chicago, The Center for American Places at Columbia College Chicago/University of Chicago Press, 2010.
62 Marshall McLuhan, *Understanding Media. The Extensions of Man*, New York, McGraw-Hill, 1964.

The convergence between new technical means, aesthetic features and a critical reflection upon the urbanized space unquestionably stimulated the interest of German photographers in the 1970s. The works of Robert Adams, Stephen Shore, Joel Sternfeld or William Eggleston offered a model that they adapted to their own environments, creating an extremely strong impetus that is constitutive of contemporary German documentary photography. The impact that the appearance of color photography and landscape photography had on the Becher students thus constitutes a crucial link between what became the Düsseldorf School and the German photographers who weren't associated with the city. However, the depiction of industrial architecture and its topographical impact in general – and the illustration of the Ruhr in particular – thus clearly connect Düsseldorf photographers and other German documentary photographers. In the recent exhibition *Ruhrblicke*, held at the Zeche Zollverein Essen in 2010,[63] Joachim Brohm was displayed along with the Bechers and most of their students. Evidently, there have been exhibitions where Becher students and the aforementioned photographers have been linked. However, it seems that there is a tendency today to picture them together and to revaluate – sometimes indirectly, sometimes explicitly – the concept of Düsseldorf School.

Despite new attempts to label that phenomenon – simply generic ("Düsseldorf Photography") or linked to an idea of school (Gronert's "Düsseldorf School of Photography," Liebert's "New Düsseldorf Photography") – a residual terminological indeterminacy remains. Is the "Düsseldorf School" a historiographically valid concept? If its validity can indeed be established, is it then a historical entity – we could indeed argue that there has been an aesthetic and methodological coherence in the works of the early students between the late 1970s and the early 1980s – or is the phenomenon still active nowadays, and it would thus require a wider definition than objectivist industrial photography and deadpan portrait photography? Some scholars, such as Michel Poivert[64] or Stefan Gronert, have suggested that the Düsseldorf School might indeed be a historically delimited period of time, because of the obvious issues of the definition of the concept as a whole. Bodies of photographers are uneven, and aesthetic and formal convergences have never been established systematically; additionally, there is no consensus yet about a name. The catalogue of the Schirmer collection uses "Düsseldorf School" in its title, but Pohlmann's essay in the book supports the historiographically speaking more contemporary "Düsseldorf School of Photography." Although Lippert's "New Düsseldorf Photography School" tries to avoid the old idea of a coherent school, replacing "Becher School" or "Düsseldorf School" with "New Düsseldorf Photography School," its position is weakened due to the lack of a definition of what would constitute the

63 Thomas Weski and Sigrid Schneider, *Ruhrblicke*, exhibition catalogue (SANAA Gebäude, Zeche Zollverein, Essen, 2010), Cologne, Walter König, 2010.

64 See Michel Poivert's review of the *Objectivités* exhibition, "*Objectivités* à Düsseldorf. Des vestiges au prestige," in *ViteVu*. Available at https://sfp.asso.fr/vitevu/index.php?post/2008/10/07/268-dusseldorf-des-vestiges-au-prestige, accessed on June 27, 2018.

"Old Düsseldorf Photography School" and what it positions itself in opposition to.

For the time being, four doctoral dissertations have been published on Düsseldorf photography. Patricia Drück, Eva Witzel, Rubert Pfab and Maren Polte have written their PhD theses on Thomas Ruff,[65] Andreas Gursky[66] and Düsseldorf photography[67] respectively, which indicates that extensive scientific studies have materialized recently. The only recent dissertation addressing photography at the Kunstakademie, the freshly translated book *A Class of their Own. The Düsseldorf School of Photography* by Maren Polte, approaches the matter historically. It produces an extensive survey of teaching and aesthetic developments, which embodies the conclusion of the recent critical re-evaluation toward the label. As a key reference for future studies on Düsseldorf, it uses the generic terminology "Düsseldorf School of Photography."

65 Patricia Drück, *Das Bild des Menschen in der Fotografie. Die Porträts von Thomas Ruff*, Berlin, Reimer, 2004.

66 Eva Witzel, *Die Konstitution der Dinge. Phänomene der Abstraktion bei Andreas Gursky*, Bielefeld, transcript Verlag, 2012.

67 Rupert Pfab, *Studien zur Düsseldorfer Photographie. Die frühen Akademischüler von Bernd Becher*, op. cit. and Maren Polte, *Klasse Becher. Die Fotografieästhetik der "Becher Schule"*, Berlin, Gebr. Mann Verlag, 2012, recently published in English as Maren Polte, *A Class of Their Own. The Düsseldorf School of Photography*, Leuven, Leuven University Press, 2017. The first dissertation in French, Françoise Haon, *Travail photographique documentaire des Becher et évolution de quatre de leurs élèves de l'Académie des Beaux-Arts de Düsseldorf. Lien avec la peinture et Gerhard Richter*, Université Lumière, Lyon, 2016, has not yet been published.

B

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.

PART 1

RECEPTION OF DIGITAL PHOTOGRAPHY:

POST-PHOTOGRAPHIC THEORIES THEORIES THEORIES AND THE GERMAN DOCUMENTARY DOCUMENTARY DOCUMENTARY DISCOURSE DISCOURSE DISCOURSE

"It is surprising that despite the manipulative potential of digital photography, the belief in the suggestive power of the image remains intact."[1] This quote from Mirjam Wittman addressing the medium's transparency in an essay of the *Objectivités* catalogue reveals an often stated but rarely studied paradox. According to its historiography, Düsseldorf photography stems from a German documentary tradition. In the 1990s however, Thomas Ruff, Andreas Gursky and Jörg Sasse started to use digital retouching tools consistently, in a period of intense theorization of such technologies. Frequently tagged post-photography, these theories argued that the digital forfeited photography's ability to capture reality, thus prohibiting a possible documentary stance. At first sight, the connections between post-photography and Düsseldorf seem rare, except for the occasional inclusion of Thomas Ruff and Andreas Gursky in later studies of the digital images[2] or projects addressing the body.[3] Methodologically, it thus seems rather unsound to compare a German documentary "movement" to a predominantly Anglo-Saxon theoretical corpus, often exemplified with explicitly manipulated images, in which the representation of the body occupies a central role. Is the use of digital tools argument enough to compare these two entities? The deadpan anti-aesthetic imagery of the 1970s inherited from Bernd and Hilla Becher, which embodies the alleged truth claim of photography defined by the strict indexical relationship between object and representation, seems incompatible with the very idea of retouching images digitally. There is an obvious incompatibility between a commonly shared idea of what documentary photography is and a body of texts and theories advocating a rupture between the photographic and the post-photographic. On the other hand, the depiction of transformations of the body, in a period where plastic surgery or genetic engineering started to question its defining characteristics, technically enacted these alterations. Post-photographic work became the chief output of these interrogations, and as such explicitly rejected that indexical bond.

In the work of the young generation of Düsseldorf photographers, the relationship to the depicted object undergoes a gradual transformation. Several photographers will shift progressively from a type of depiction that can be logically linked – and in fact was – to the Bechers and their rigorous "documentary" approach, to a conception of photography where the image as sheer construction, with its inherent mechanisms, is as important as the depicted subject. Thomas Ruff represents the most extreme embodiment of this development. In the

1 Mirjam Wittman, "Blow-up. Grand format et impact visuel," in Maria Müller, Armin Zweite and Fabrice Hergott (ed.), *Objectivités. La photographie à Düsseldorf*, op. cit., p. 78. Published as a longer version as Mirjam Wittman, "'Das Grossformat lag einfach in der Luft.' Zur Bildwirkung der Fotografie aus Düsseldorf," in Martin Schulz and Beat Wyss (ed.), *Techniken des Bildes*, Munich, Fink, 2010.

2 See for example Jonathan Lipkin, *Photography Reborn. Image Making in the Digital Era*, New York, Harry N. Abrams, 2005.

3 See for example Jeffrey Deitch (ed.), *Post Human*, exhibition catalogue, FAE Musée d'art contemporain, Pully, 1992 or Robert A. Sobiezek, *Ghost in the Shell. Photography and the Human Soul, 1850 – 2000: Essays on Camera Portraiture*, Cambridge and London, Los Angeles County Museum of Art/MIT Press, 2001.

2000s, he produced non-figurative images, resulting from the transformation of photographic found material (e.g., Manga pictures) or from generative processes (e.g., based on nineteenth-century scientific representations of electromagnetic fields), questioning the very idea of photographic imagery by undermining its representational mechanisms. His abstract pictures still *reflect* reality but clearly elude the strictly analogue relationship that the medium is often defined by. Ruff translates objects into visual output, hiding their origin and reproducing them through computations. But the idea of photography as a construction is also present in earlier stages of his oeuvre. For instance, when asked about his relationship to the Neue Sachlichkeit photographers in 1993, he answers that while they believed they had captured reality, he just believed he had created a picture,[4] which shows to which extent the iconic aspect – more than the indexicality – is central to his work. But despite a redefinition of the documentary practices of Ruff and some Becher students and their reliance on digital post-production systems, they have been continuously considered documentary photographers, without the concept being in itself questioned or re-evaluated. Furthermore, they have hardly ever been connected with artistic practices associated with digital technological developments.

If we consider the importance of the concept of indexicality in relation to post-photographic theories and the discourse about the end of photography, it is surprising that the work of the Becher students is hardly ever questioned in the light of those theoretical efforts and the (supposedly) new paradigm they proclaim. If so, their production is usually read in relationship to later studies[5] and not to the early debate of the 1990s, whose implications we are trying to explore in this study. The first element that comes to mind to explain this dissociation is a feature that appears naive but that has implications reaching out to theoretical, historiographical and epistemological levels: in the early stages of digital retouching in the 1990s, Ruff or Gursky's photographs did not *look* digital. Thomas Ruff's first digitally retouched image *Haus Nr. 11* (Fig. 7) does not appear to be retouched; on the other hand, most of Nancy Burson's pictures seem manipulated (Fig. 8), but not all actually are (e.g., the *Daguerreotypes* series, 1990 – 1991). As Tom Gunning or William J. T. Mitchell have demonstrated,[6] the truth claim of photography derives from a culturally constructed relationship with reality and its credible representation. Less than strict indexicality itself, it is the plausibleness of the photographic image that defines the ability of the recipient to believe in the depicted object. Since most post-photographic images, on the other hand, explicitly enact some kind of manipulation, it seems logical that they have been read in the light of theories investigating the appearance of digital technologies, a discourse arguing the forfeiture of that truth claim.

4 Interview of Thomas Ruff by Philip Pocock, *Journal of Contemporary Arts*, Vol. 6, Summer 1993, p. 78. Available on http://www.jca-online.com/ruff.html, acessed on January 15, 2018.

5 See for example Jonathan Lipkin, *Photography Reborn. Image Making in the Digital Era*, op. cit.

6 See for example Tom Gunning, "What's the Point of an Index? Or Faking Photographs," in *Nordicom Review*, Vol. 5, No. 1/2, September 2004 and W. J. T. Mitchell, "Realismus im digitalen Bild," in Hans Belting (ed.), *Bilderfragen. Die Bildwissenschaft im Aufbruch*, op. cit.

The appearance of the digital in photography is almost systematically associated with manipulative, truth-endangering practices. Düsseldorf photographers, on the other hand, *seem* to comply with what is considered traditional documentary photography. And since they seem to fulfill the alleged truth claim of the photographic representation itself – an implicit agreement between viewer and image producer –, they are consequently not associated with the digital. Apparently, the reception of digitally manipulated imagery hinges chiefly on what the image looks like, rather than the mechanisms it relies upon. Considering the pre-eminence of indexicality in the history of photographic theories and the definition of the medium through its very ability to represent, it seems thus necessary to investigate the odd parallelism between "documentary" images and post-photographic images and to assess the antagonistic reception in the period of emergence (1990s) and recent generalization (2000s) of these two very different types of digitally manipulated photographs.

Fig. 7: Thomas Ruff, *Haus Nr. 1 I*, 1987 (179 × 278 cm)

The photorealism of Düsseldorf photographers, and the documentary discourse they were associated with during the 1990s, seems to be a productive lead to understand why they are hardly ever mentioned during that early period in the discourse on the digital, although they are mentioned more often in recent studies. The art historical concept of the "Düsseldorf School" is commonly associated with the Bechers and with Neue Sachlichkeit. If we were to consider visual evidence of the production of the Becher students from the late 1970s to the late 1980s, we could indeed conclude that it seemingly responds to an archival impulse[7] and constitutes an aesthetic continuation with the neutral, objective and deadpan imagery documentary photography supposedly produces. Moreover, it typically depicts objects suited for documentary photography (architecture, landscape and portraits) in an appropriate conceptual framework (serial representation, typologies, etc.). The fact

7 See for example Hal Foster, "An Archival Impulse," *October*, Vol. 110, Autumn 2004.

that the influence of Stephen Shore on the Becher students has been "spread equally by critics, art historians and the artists involved," but never consequently explored, shows to what extent supposedly established facts became common ground, as Christoph Schaden has recently shown.[8] The recent re-evaluation of the concept of a coherent "Düsseldorf School" itself has opened a breach that calls for a differential reading of the modalities and specificities of the practices of its members. If Thomas Ruff didn't retouch photographs until the late 1980s, he still constructed the image as he wanted it to look, disregarding the notion of imprint or depiction. The *Porträts* series, for example, which has often been read as a clinical documentary approach, has been extensively staged,[9] which, obviously, comes as no surprise. Audiences want to believe in a credible photographic representation, and there seems to be an equivalent proclivity in the critical or art historical discourse to believe in an objectivist paradigm.

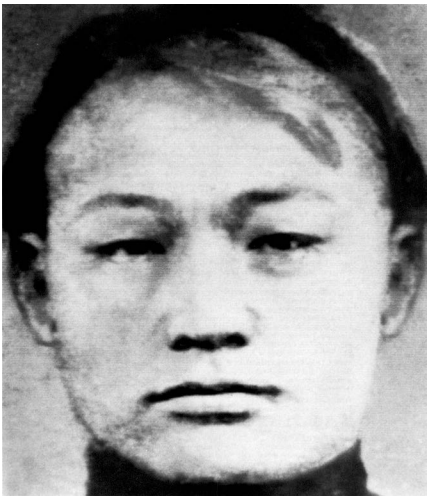

Fig. 8: Nancy Burson, *Mankind*, 1983 – 1985 (b/w, gelatin silver print from computer-generated negative, 28 × 35.5 cm)

Although today it has been acknowledged that Düsseldorf photography doesn't pursue a strictly documentary practice (Matthias Winzen's formulation, "a credible invention of reality,"[10] is in that respect symptomatic), the mainstream critical and theoretical opinion in the 1990s

8 Christoph Schaden, "'To Be Sure, That Is Also the Expression of a Particular Vital Consciousness.' On the Reception of Stephen Shore's Work in Germany 1972 – 1995," in Werner Lippert and Christoph Schaden (ed.), *Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography*, op. cit.

9 "For the large-scale *Porträts*, I had a very big influence on the photographed image by determining the setting, arranging the light, correcting the posture or facial expression of the person portrayed or asking my friends to put on particular clothes," interview of Thomas Ruff by Gerald Matt, in *Thomas Ruff. Oberflächen, Tiefen – Surfaces, Depths*, exhibition catalogue (Kunsthalle Wien, 2009), Nuremberg, Verlag für Moderne Kunst, 2009, p. 232.

10 Matthias Winzen, "A Credible Invention of Reality," in Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979 – heute*, exhibition catalogue (Staatliche Kunsthalle, Baden), Cologne, Walter König, 2003. If initially used to describe Ruff's oeuvre, the formulation would also be appropriate for Andreas Gursky, Jörg Sasse or Thomas Struth.

predominantly advocated a reading in which verisimilitude and authenticity, or at least an objectified representation, were not consequently differentiated, as will be explored in part 2. Seemingly documentary practices were thus, logically, received accordingly. If the difference between post-photographic imagery and the work of the Becher students – the overtness or invisibility of digital manipulation –, definitely seems productive to evaluate the reception of the images, it is a much wider discipline-specific discourse that has shaped the idea of what defines digital photography and what delineates documentary photography. In both phenomena, despite obvious differences in conception and reception, the role of indexicality is, as mentioned above, central. The associated notion of photographic truth has been extensively deconstructed by scholars, and the concept of documentary has been increasingly read as a practice in which the discursive, self-legitimizing arguments play a central role: while all photographs could be considered documents, practices which claim their affiliation to the documentary at least offer a somehow smaller circumscription that allows a more concrete approach, even if this categorization also induces a hagiographical misconception of what the documentary might be, limited to its key figures.[11] But through the American postmodern reinterpretation of the index and its widespread influence in the Anglo-Saxon and the French cultural area,[12] the photographic has been re-imprinted with the idea of trace, building a framework that allowed "no reading of [photography] outside representation."[13] The core mechanism we aim to investigate in this chapter addresses the role played by the theorization and the critical discourse of photographic practices in their relationship to representation. Because a reading stressing the importance of the notion of (physical) imprint has played a central role in the history and conceptualization of photography, that very criterion emerges as the key to the understanding of the reception of digital imagery. The importance of the digital per se in art historical discourse on photography gradually loses importance, while technologies are absorbed by mainstream and artistic use. But the history of discourses and the technical history of the apparatus will remain central to the comprehension of the body of images and artists who emerged from this specific technical and epistemological context.

Three discrete phenomena will thus be addressed in this chapter, to understand the (non) reception of the digital in the Düsseldorf context. On one hand, we will sketch out the construction of a specifically German documentary paradigm in the 1960s and 1970s, looking at the 1979 exhibition curated by Klaus Honnef and Wilhelm Schürmann, *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie*. In the (now) iconic show Honnef formulated his explicit intent

11 See Olivier Lugon, *Le style documentaire. D'August Sander à Walker Evans, 1920 – 1945*, Paris, Macula, 2001.

12 See for example Katia Schneller, "Sur les traces de Rosalind Krauss. La réception française de la notion d'index. 1977 – 1990," *Etudes photographiques*, No. 21, December 2007.

13 Sarah James, "The Truth about Photography," *Art Monthly*, No. 292, December 2005/January 2006, p. 8. In an article overviewing photo-theoretical developments since the 1970s, James argues that "no new paradigm of thinking about photography has emerged" in the past ten years and that documentary photography in particular lacks an appropriate critical and theoretical response.

to legitimate author photography based on documentary forms. As Peter Galassi noted in 2001, commenting on the genesis of the Düsseldorf School, Klaus Honnef's theory of "author photography," formulated for the exhibition, legitimated documentary photographers as artists, despite the "practical functions and passive realism of their work".[14] Connected with various epiphenomena such as the reception of Walter Benjamin's writings in the 1960s and 1970s, the dissemination of "documentary" photography as an art form by collectors such as Ann and Jürgen Wilde, and the contemporary theorization by scholars like Wolfgang Kemp or Rolf H. Krauss, the analysis of *In Deutschland* aims to show the rediscovery of photography in the 1960s and 1970s. As Rolf Krauss notes in the introduction of his 1979 text *10 Thesen zur konventionellen und konzeptionellen Photographie*, "something strange happened in the 1960s: the importance of the medium was discovered, although it had been invented 125 years earlier."[15]

On the other hand, it seems imperative to investigate the theoretical debate arisen amid those technological developments and the discourse of rupture, delineating fundamental geographical differences. Since we are addressing the critical reaction to technological developments and concurrent imagery, it is necessary to discuss the historiography of photography-specific theories, which have evolved quite differently in the Anglo-Saxon, the German and the French context. While those developments are not necessarily linked with the technical aspects discussed in this chapter, or only to a certain extent, it is crucial to confront them with the debate accompanying technological advancements. As we will demonstrate, the reception of digital manipulation in Düsseldorf is closely related to a wider response to those technologies on the one hand, and to particular historiographical developments in Germany on the other.

Finally, the investigation and confrontation of two categories of contemporary artistic practices in Germany – post-photography and documentary photography – should allow a more thorough understanding of the mechanisms of adoption of digital technologies and the resultant discourse. To outline the discursive field of digital imagery, it seems central to mobilize those two initially opposed but eventually converging practices. Post-photographic imagery, because of its visible enactment of retouching and digital aesthetics, can be considered the most obviously perceptible response to technological developments. Düsseldorf documentary photography on the other hand, because of the way it seems to enact an objectivist paradigm, embodies the very opposite of those heterogeneous practices. It seems to epitomize the relationship between photograph and depicted object, exemplifying index-based photography theories, and thus – at least seemingly – embodying a conception of photography stemming from structuralist methodologies. The aim of the forthcoming section is therefore to evaluate the impact of technical manifestations of the

14 Peter Galassi, "Gursky's World," in Peter Galassi (ed.), *Andreas Gursky*, exhibition catalogue (Museum of Modern Art, New York, 2001), Ostfildern, Hatje Cantz, 2001, p. 13.

15 Rolf H. Krauss, *Photographie als Medium. 10 Thesen zur konventionellen und konzeptionellen Photographie*, Ostfildern, Cantz, 1995 (1979), p. 9.

digital in theories and artistic practices. How did a technical, medium-based reading of digital imagery interact with those artists, and how can their images and their reception be interwoven with photo-theoretical developments?

As it is our goal to sketch out the impact of technological determinism in the reception of digital technologies and to produce a critical synthesis of elements potentially relevant to an epistemological framework capable of reflecting these technological changes, our analysis will only be partial, an attempt to outline general tendencies. It is not our aim to make an exhaustive history of post-photographic theories and practices or of the construction of the German documentary paradigm, but solely to understand how the existence of an entity commonly identified as the outcome of those new technologies, combining theories and practices ordinarily associated with the "digital revolution," has influenced the (non-) reception of retouching tools used in Düsseldorf. It is why two important exhibitions will be given particular attention. *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie* (1979) and *Fotografie nach der Fotografie* (1996) both possess exemplary character due to their importance and reception, crystallizing discourse and debate on the documentary and the digital, respectively. This path implies methodological shortcuts – an exhaustive study of those developments has yet to be made –, but despite a partial inventory of the impact of technical characteristics in discourse and imagery, the outline of those mechanisms is sufficient to explore the core issue of this study, Düsseldorf photography. The understanding of the *episteme* of the digital,[16] so to speak, implies thinking technology outside "the technological dimension of the media,"[17] through the understanding of the discursive preconditions of those technical developments, in which a newly constructed documentary tradition plays a central role.

16 For a definition of the Foucaldian concept of episteme applied to visual systems, see Maria Tortajada, "Archéologie du cinéma. De l'histoire à l'épistémologie," *CiNéMAS*, Vol. 14, No. 2 – 3, 2004.

17 Ibid., p. 27.

A EMERGENCE OF A GERMAN DOCUMENTARY TRADITION

To define German documentary photography entails, as a fundamental precondition, to understand what the term precisely means, in order to evaluate what concepts, discourses or practices it derives from. As has been exhaustively shown by Olivier Lugon in various publications,[18] the "fluid" term of documentary has been given numerous definitions over time, fluctuating according to period, geographical and linguistic specificities and individual or institutional practices. While the definition of documentary film seems (somehow) more clearly delineated – the documentary is often defined through its opposition to fiction – there is no such equivalent in photography.[19] Despite considerable variation in its understanding, the approaches to documentary nevertheless share some common ground. Aspirations differ considerably, but there remains – common to those various trends – "the desire to reveal 'things as they are,' to provide reliable, authentic information, avoiding any embellishment that might alter the integrity of reality."[20] The history of documentary is thus a history of discourse, a history of positions, whose strength resides in the perpetual interrogation of photography's own characteristics: "The

18 See for example Olivier Lugon, "L'esthétique du document. 1890 – 2000. Le réel sous toutes ses formes," in André Gunthert and Michel Poivert (ed.), *L'art de la photographie*, Paris, Citadelles et Mazenod, 2007.

19 Olivier Lugon, "'Documentary.' Authority and Ambiguities," in Maria Lind and Hito Steyerl (ed.), *The Green Room. Reconsidering the Documentary and Contemporary Art #1*, Berlin, Sternberg Press/Center for Curatorial Studies Bard College, 2008, p. 29.

20 Ibid.

nebulous definition [...] has undoubtedly been the chief factor influencing its viability."[21] Discourse legitimating the documentary has eventually operated as the key parameter that historians could build upon to understand the concept.

Addressing documentary photography not only requires a circumstantial reading, considering particular practices and contextual situations in order to assess one specific object – in our case German documentary photography –, but it also consequently entails the confrontation of varying definitions and heterogeneous enunciating entities. If one is to examine the German case, not only does its own history require a specific historicization, but it also entails that one accounts for geographical and cultural differences in the scientific fields addressing it. As will become apparent throughout this chapter, the concept of documentary and its definition through the discourse on the relationship between image and reality differs considerably in the Anglo-Saxon and German context. Furthermore, the reception and conception of the use of digital imaging technologies diverge noticeably in those two contextual fields, which ultimately allows the reception of those tools to be associated with a given, geographically and culturally conditioned, conception of the documentary. The history of the theorization of photography has, as a matter of fact, evolved differently in Germany than in the United States or the United Kingdom. Grossly schematized, the Anglo-Saxon field has benefitted from a strong post-structural impetus, led by John Tagg and Victor Burgin in the United Kingdom and by Rosalind Krauss and Abigail Solomon-Godeau in the United States.[22] Germany has kept a predominantly historical approach toward the object "photography," resorting to key thinkers of the Frankfurt School.[23] If this extremely simplified conception has not yet been systematically examined,[24] it can nevertheless be used as a starting point for understanding the conception of the documentary and the reception of digital imageries in Germany, the United States and the United Kingdom – a point of departure that may provide some answers to the question of why digitally retouched photographs from the Becher students were not, until very recently, perceived as digital.

In order to understand the modalities of the reception of digital photography in Düsseldorf, and more generally to establish the reception of digital imaging in Germany, it is thus necessary to point out the specificities of German documentary photography discourse. In the common mainstream understanding, German photography often

21 Ibid., p. 31.

22 Sarah James, "The Truth about Photography," *Art Monthly*, No. 292, Dec. 2005/Jan. 2006, p. 8.

23 One notable exception remains Klaus Honnef's rather uncommon resorting to Bazin and French author theory. See for example Klaus Honnef, "Es kommt der Autorenfotograf. Materialien und Gedanken zu einer neuen Ansicht über die Fotografie," in *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie*, op. cit., p. 47 ff.

24 Sarah James seems to be one of the few scholars who has started to undertake the examination of those differences in the photo-theoretical field in Germany. See for example Sarah James, "Photography's Blind Spot. Looking at the German Paradigm," in *Photographies*, Vol. 2, No. 2, September 2009 and Sarah James, *Common Ground. German Photographic Cultures across the Iron Curtain*, New Haven and London, Yale University Press, 2013.

equals German documentary photography, while German contemporary photography often equals Düsseldorf photography. This is obviously not a scientific fact, but a shared *lieu commun*, which can be found in critical or mainstream literature addressing those particular objects. German photography has over time, at least at first glance, been identified through some of its "main" mind-sets. Despite a multitude of practices, applications, channels of diffusions and uses, German photography is frequently envisioned as a coherent, linear and uninterrupted development. The Neue Sachlichkeit, the paradigmatic documentary movement from which contemporary photographers such as the Becher pupils have supposedly emerged, is often seen as a rectilinear and logical story, disregarding the complexity of its actual history and often ignoring strategies that do not seem to seek to "show things as they are." German photography is regularly associated with the idea of documentation. The most famous names linked with second generation Düsseldorf photography are figures such as August Sander, Albert Renger-Patzsch or the Bechers themselves, all of whom have, to a certain extent, been read as part of that particular history of German photography. Even figures such as Walter Benjamin show a clear proclivity toward documentary imageries – in his case for political and ideological reasons (not exclusively, obviously) –, which reinforces the documentary paradigm that Ruff, Höfer or Hütte are associated with. The concept of photography as reproduction (*Abbild*) remains central. While connections with these fatherly figures define the discursive field in which Düsseldorf photography is interpreted, numerous (potentially productive) connections with other photographic models – for example, László Moholy-Nagy or *generative Fotografie*[25] –, remain un- or underexplored. The image as an autonomous entity (*Bild*) is analyzed in relation to painting, omnipresent in the formal genealogy of Düsseldorf photography, but most photographic models, which do not embody a paradigmatic documentary style, are excluded as potential sources.

The Becher students are commonly interpreted as the outcome or logical continuation of that specifically German documentary tradition. Their historiography is considerably shaped by their relationship with a group of iconic fatherly figures. However, while a formal and contextual relationship with these photographers appears unquestionable, the effective impact of previous generations on Düsseldorf photography in the late twentieth century is commonly stated without being methodically established. Often assumed, and established through evident formal features (frontal constructions, homogenous lighting, etc.) and representational strategies (typology, serial construction, etc.), the connection between these models and the younger generation oversees most tangible contextual elements and

25 Gottfried Jäger for instance derives his shift from "reproductive" to "productive" strategies directly from "experimental" photography of the 1920s, quoting László Moholy-Nagy's *Malerei, Fotografie, Film* (Passau, Passavia Druckerei, 1927, p. 28). See Gottfried Jäger, "Generative Photography. A Systematic, Constructive Approach," in *Leonardo*, Vol. 19, No. 1, 1986 and Anaïs Feyeux, "La *Generative Fotografie*. Entre démon de l'exactitude et rage de l'histoire," op. cit.

obvious differences.[26] But until the 1970s, German documentary photography as a coherent entity did not yet exist, for various contextual reasons. The German documentary paradigm merely emerges in these years. This particular period was an incredibly prolific environment for the development of photographic practices and their legitimation as an art form, shaped by numerous factors. Major figures of the New Objectivity, but also Walker Evans or Eugène Atget, were being rediscovered at the time through various channels.[27] Benjamin's work, disregarded for decades due to "unfortunate" edition politics, negative reactions of the photographic community, his Marxist-materialist positions[28] and a "particular" conception of the writing of history,[29] was also newly discovered, and some of his key writings published for the first time.[30] The work of various galleries, such as Lichttropfen in Aachen (created in 1974) or Konrad Fischer in Düsseldorf (created in 1967), the activities of collectors such as the Wilde couple, the increasing recognition by various museums and several important exhibitions such as the *documenta 5* (1972) and *documenta 6* (1977) in Kassel or the *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie* in 1979 exhibition in Bonn, increasingly established photography as an institutionally and economically accepted art form whose definition in Germany derives from the concept of documentation and remains powerfully attached to that very notion.

Before sketching out this context of emergence and outlining the fact that key protagonists such as Klaus Honnef intentionally planned and carried out the construction of a specifically German documentary paradigm in photography, it ought to be highlighted that

26 See especially Martina Dobbe's chapter on "Neue Neusachlichkeit," in *Bernd und Hilla Becher. Fachwerkhäuser*, Siegen, Museum für Gegenwartskunst Siegen, 2013 (2001), p. 53 – 71 and *August Sander, Karl Blossfeldt, Albert Renger-Patzsch, Bernd und Hilla Becher. Vergleichende Konzeptionen*, exhibition catalogue (Photographische Sammlung/Sk Stiftung Kultur, Cologne), Schirmer/Mosel, Munich, Paris and London, 1997.

27 Christoph Schaden, "To Be Sure, That Is Also the Expression of a Particular Vital Consciousness. On the Reception of Stephen Shore's Work in Germany 1972 – 1995," in *Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography*, op. cit., p. 55.

28 Rolf H. Krauss, *Walter Benjamin und der neue Blick auf die Photographie*, op. cit., p. 10 – 13 and chapter "Zur Rezeption der Benjaminschen Schriften über Photographie und zu deren Wirkung auf Texte über Photographie nach 1963," p. 81 – 88. Krauss chiefly bases his study of the reception of Benjamin on Detlev Schöttker, "Walter Benjamin und seine Rezeption. Überlegungen zur Wirkungsgeschichte (aus Anlaß des 100. Geburtstags am 15. Juli 1992) ," *Leviathan. Zeitschrift für Sozialwissenschaft*, Vol. 20, No. 2, 1992.

29 Krauss emphasizes Benjamin's "aporetic [aphoristiche]" way of writing and thinking, which combines fragments (Krauss uses the concept of montage as a metaphor to describe it), instead of proceeding linearly. That strategy complicates the reading and understanding, which might be another hindrance to his reception. Rolf H. Krauss, *Walter Benjamin und der neue Blick auf die Photographie*, op. cit., p. 88 – 89.

30 Krauss also suggests more projectively that the uses of photography during the national-socialist regime (and Benjamin's exile and suicide) hindered the spreading of his writings and thought. See Rolf H. Krauss, *Walter Benjamin und der neue Blick auf die Photographie*, op. cit., p. 10 – 14. On the relationship between photography and National Socialism see for example Rolf Sachsse, "Photography as NS State Design. Power's Abuse of a Medium" and Peter Reichel, "Images of Power – Power of Images," in Klaus Honnef et al. (ed.), *German Photography 1870 – 1970*. Power of a Medium, exhibition catalogue (Kunst- und Ausstellungshalle der Bundesrepublik Deutschland, Bonn, 1997), Cologne, DuMont Buchverlag, 1997. On the idea of an impact of the trauma of World War Two on image production in Germany after the conflict, see especially Andrés Mario Zervigón, "Le *Wiederaufbau* de la perception. La photographie allemande dans l'après-guerre, 1945 – 1950," *Etudes photographiques*, No. 29, 2012.

this particular context is rather scarcely mentioned in the understanding of Düsseldorf photography. The main reason logically derives from the fact that only few scholars have addressed the phenomenon as a whole.[31] Rolf H. Krauss, among a handful of other historians,[32] has thoroughly reconstructed Benjamin's reception in an artistic context.[33] Inka Graeve has laid out the fundaments for the understanding of the role of Ann and Jürgen Wilde,[34] who acquired parts of Franz Roh's collection of photographs in the 1960s, which constituted the starting point for one of the most important collections of photography in Germany.[35] But numerous facets of that particular history remain largely unwritten and their implications for Düsseldorf photography underexplored. The role of Wilhelm Schürmann and Rudolf Kicken, who created one of the first photography galleries in Germany (Lichttropfen, Aachen), the curatorial endeavors of Klaus Honnef or the influence of the first editor of an author photography publisher in Europe, Schirmer/Mosel, have hardly been considered, either as autonomous histories or parts of the history of the Düsseldorf School.

Although incomplete, three scholars in particular have addressed aspects of that history and emphasized its importance. Historical and geographical distance has allowed Peter Galassi, as Christoph Schaden notes, to understand and sketch out the preconditions for a "paradigmatic change" in the perception of the mechanical image in Germany.[36] Klaus Honnef's theory of "author photography" legitimated documentary photographers as artists, despite the "practical functions and passive realism of their work."[37] Schaden himself has explored the role of Klaus Honnef as curator of *In Deutschland* and of the photography section of *documenta 5*, but

31 While this phenomenon has not been studied extensively in correlation with Düsseldorf, the 1960s and 1970s are addressed in the recently published thesis of Allessandra Nappo, *I nuovi documentaristi tedeschi. Forme di sopravvivenza della "Neue Sachlichkeit" nella fotografia degli anni Sessanta e Settanta*, Milano, Scalpendi, 2017, the connection between the Bechers and New Objectivity in the self-published dissertation of Annika Baacke, *Fotografie zwischen Kunst und Dokumentation. Objektivität und Ästhetik, Kontinuität und Veränderung im Werk von Bernd und Hilla Becher, Albert Renger-Patzsch, August Sander und Karl Blossfeldt*, Fachbereich Geschichts- und Kulturwissenschaften der Freien Universität Berlin, dir. Peter Geimer & Werner Busch, 2013 (Berlin, epubli, 2014).

32 For example Jessica Nitsche, *Walter Benjamin's Gebrauch der Fotografie*, Berlin, Kadmos, 2011.

33 According to Rolf Sachsse, Krauss has done so in the particular context of the convergence between photography and fine arts, considering the role of Benjamin in a medium-specific reading. He proceeds as if photography were an autonomous technology, disregarding "the interplay of external phenomena such as [...] television, pop music or office copy machines [...]." As such, still according to Sachsse, his account wouldn't be compatible with a history of representations. From our point of view, his study could thus be interpreted as the perpetuation of the construction of the German documentary paradigm, medium oriented and rooted in an artistic context. See Rolf Sachsse, "Rolf H. Krauss, *Walter Benjamin und der neue Blick auf die Photographie*, Ostfildern, Cantz Verlag, 1998, 128 p., chronol., bibl.," *Etudes photographiques*, No. 6, May 1999.

34 Inka Graeve (ed.), *Mechanismus und Ausdruck. Die Sammlung Ann und Jürgen Wilde: Fotografien aus dem 20. Jahrhundert*, exhibition catalogue (Sprengel Museum Hannover, 1999, Kunstmuseum Bonn, 2000), Munich, Sprengel Museum Hannover/Schirmer Mosel, 1999.

35 Ulrich Krempel and Thomas Weski, "Preface," in Inka Graeve (ed.), *Mechanismus und Ausdruck. Die Sammlung Ann und Jürgen Wilde: Fotografien aus dem 20. Jahrhundert*, op. cit., p. 7 – 9.

36 Christoph Schaden, "'Denken wir nicht überflüssig, sondern notwendig.' Anmerkungen zur epochalen Photoausstellung *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie* (1979)," in *Frame #3. Jahrbuch der Deutschen Gesellschaft für Photographie*, Göttingen, 2010, p. 180.

37 Peter Galassi, "Gursky's World," op. cit., p. 13.

also of various exhibitions showing "historical" documentary photographers, emphasizing his explicit aim to "artificially" redefine photography. With his essay on the influence of American photography in Germany during that period,[38] Schaden substantially contributes to the understanding of that context, as he is one of the few scholars systematically exploring the "matrix" of the emergence of Düsseldorf photography. With Stefan Gronert's introductive article of "Die Düsseldorfer Photoschule," in which he lays out various aspects of that history and connects it with Düsseldorf, especially emphasizing Honnef's role,[39] these three scholars have laid out the premises of a historically more accurate account of the emergence of photography as an art form in Germany that plays a key role in the understanding of the Düsseldorf School and its reception.[40] This process will be sketched out by analyzing several of its facets. The study of *In Deutschland* aims at understanding the role of Klaus Honnef as curator and Bernd Becher as mediator of that idea. On a more theoretical side, the impact of the reception of Walter Benjamin, the core theoretical legitimation of that paradigm, will be schematically outlined. The study of several academic attempts to formalize the history of German photography and theory in the late 1970s and early 1980s intends to show how that history has been (re-)written. And although they won't be examined in detail, the role of various factors, such as important galleries, collectors and magazines, will be sketched out in order to understand their role in this history.

Ultimately, the chief endeavor lies in pinning down the idea of documentary advocated altogether, to pose it as counter-model to post-photography. This confrontation poses an important hypothesis for the understanding of the interactions of these "two" histories: Can it be established that the resistance toward digital technologies in the reception of the Düsseldorf School could be attributed to the special role the concept of documentary has played in the institutionalization – as legitimated artists – of the photographers of the Düsseldorf School, and photography in general? And could it more generally be advocated that the legitimizing process of photography as an art form could have been threatened or jeopardized by the discourse on the end of photography?

38 Christoph Schaden, "To Be Sure, That Is Also the Expression of a Particular Vital Consciousness. On the Reception of Stephen Shore's Work in Germany 1972 – 1995," in *Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography*, op. cit.

39 Stefan Gronert, "Photographische Emanzipation," in *Die Düsseldorfer Photoschule*, op. cit., especially p. 15 – 23.

40 More generally, it has to be emphasized to which extent these projects highlight the potentially "artistic" nature of the mechanical image, based on formal and historical models (e.g., Sander, Renger-Patzsch, etc.); while not necessarily "inartistic" in their prospect, these figures were *posited as* artistic during the two decades between the mid-1960s and the early 1980s. In Germany, documentary photography as a recognized art form thus emerges simultaneously with photography as an art form at this particular moment in time.

1 "IN DEUTSCHLAND" (1979), "AUTORENFOTOGRAFIE" AND "LA POLITIQUE DES AUTEURS"

Theoretical fundaments of a canon

The first image in the exhibition catalogue for *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie*, held at the Rheinisches Landesmuseum Bonn in 1979, shows an evanescent Ingrid Bergman in Alfred Hitchcock's 1946 thriller *Notorious*. The photograph of the feature film appears in an article written by the curator of the exhibition, Klaus Honnef, aiming at situating and defining the (theoretical) stakes of documentary photography in Germany. In a letter to Tata Ronkholz, informing her of his curatorial intentions, Honnef explains his endeavor. "[The exhibition] tries to formulate a new understanding of 'documentary photography.' [...] It shall be limited to specifically German themes [...] and its theme selection shall be tied to an obviously already existing photographic tradition in Germany."[41] Honnef makes explicit three major parameters of his project, which underlie the construction of a specifically German documentary tradition. He sketches out a new "movement," somehow artificially aiming at constituting a canon. To do so, he limits his body of work to German photography, to create a more coherent entity. And finally, he inscribes that project in a pre-existing German documentary tradition. But the one element missing from his endeavor to promote young documentary photography – which started to get attention through the recognition of the Bechers by American conceptual artists and their galleries (e.g., the 1972 Becher exhibition at the Sonnabend Gallery in New York) – was their theoretical legitimation: How could the photographers exhibited in Bonn – Johannes Bönsel, Ulrich Görlich, Candida Höfer, Axel Hütte, Wilmar Koenig, Hans-Martin Küsters, Martin Manz, Hartmut Neubauer, Heinrich Riebesehl, Tata Ronkholz, Michael Schmidt, Wilhelm Schürmann and Thomas Struth – be fortified and positioned? And how could documentary photography be artistic altogether?

The title of Honnef's essay addressing this very issue, "Es kommt der Autorenfotograf. Materialien und Gedanken zu einer neuen Ansicht über die Fotografie," not only sounds like a manifesto, but also explicitly refers to Werner Gräff's essay "Es kommt der neue Fotograf".[42] The author of the avant-garde manifesto also re-emerges in the late 1970s, through a reprint of his book in 1978[43] and in Ute Eskildsen's exhibition at the Folkwang Museum Essen *Film und Foto der 20er Jahre*. Honnef overtly refers to the programmatic book to profit

41 Letter from Klaus Honnef to Tata Ronkholz, 1 March 1979, Estate of Tata Ronkholz (managed by Van Ham Kunstauktionen, Cologne). Quoted in Christoph Schaden, "'Denken wir nicht überflüssig, sondern notwendig.' Anmerkungen zur epochalen Photoausstellung *In Deutschland. Aspekte gegenwärtiger Dokumentar-fotografie* (1979)," op. cit., p. 182.

42 Werner Gräff (in collaboration with Hans Richter), *Es kommt der neue Fotograf*, Berlin, Verlag Hermann Reckendorf, 1929.

43 Werner Gräff (in collaboration with Hans Richter), *Es kommt der neue Fotograf*, Cologne, Walter König, 1978.

from its status and inscribe his project in a history.[44] The text itself constitutes a singular occurrence in the theoretical legitimation process of photography altogether. After the death of the author had been advocated in the 1960s by theorists (e.g., Roland Barthes and Michel Foucault) and artists (e.g., conceptual art) alike, "Es kommt der Autorenfotograf" seeks to legitimate photography in that particular context, but to do so it resorts to an alien tradition: cinema.[45] More than many other films, *Notorious* is considered the achievement of what makes Hitchcock "more" than a sheer filmmaker, but an author: his handwriting, his style. In the beginning of his text, Honnef – who was a film critic at the time[46] – mentions Alexandre Astruc's famous article "Naissance d'une nouvelle avant-garde: La caméra-stylo"[47] of 1948, which legitimates the concept of authorship in cinema (and the medium's autonomy from other media in a Greenbergian perspective),[48] which will be formalized by the critics of the *Cahiers du cinéma* a few years later. Labeled "la politique des auteurs," after a text written by French critic and filmmaker François Truffaut in 1955 – "Ali Baba et la 'Politique des Auteurs'"[49] – the concept is discussed by Honnef to highlight the wide cultural acceptance of film as art after the Second World War, which he imputes to the articulation between the films themselves, their reception and the theorization of the medium. Film theory, Honnef argues, is far more advanced than photography theory: "Film theory [is] worlds ahead of photography theory".[50] Although he mentions most of the important photography theories in his text (e.g., Benjamin, Kracauer, Bazin), he regrets the fact that photography does not yield an immanent theorization, which derives from the medium itself rather that from the outside, unable to detach itself from the influence of painting, sociology and psychology.[51] Two interrelated key ideas emerge from that assessment, and become Honnef's argumentative

44 It could be argued that the comparison is counterproductive, as Gräff argues against a visual system (based on a central perspective) and for a new one, while Honnef's endeavor is rather based on the inscription of contemporary photography in a documentary tradition. See Olivier Lugon, "Le marcheur. Piétons et photographes au sein des avant-gardes," *Etudes photographiques*, No. 8, November 2000.

45 While film studies and history and theory of photography possess important common references (Benjamin, Kracauer, Adorno, Bazin, etc.), their respective historiographies remain surprisingly dissociated. Attempts to legitimate photography as art based on the model of cinema are rather scarce.

46 See Interview of Klaus Honnef by Christoph Schaden, "'Wilhelm war nicht amüsiert darüber.' Ein Gespräch zum 70. Geburtstag über die Austellung *In Deutschland,"* in *Frame #3. Jahrbuch der Deutschen Gesellschaft für Photographie*, op. cit., p. 195.

47 Alexandre Astruc, "Naissance d'une nouvelle avant-garde. La caméra-stylo," *L'Ecran français*, No. 144, March 1948.

48 See Clement Greenberg, "Avant-Garde and Kitsch," in *Partisan Review*, Vol. 6, No. 5, Fall 1939 and Clement Greenberg, "Toward a New Laocoon," in *Partisan Review*, No. 7, No. 4, July–August 1940.

49 François Truffaut, "Ali Baba et la 'Politique des Auteurs,'" *Cahiers du cinéma*, No. 44, February 1955. The *Cahiers du cinéma* compiled the interviews around the notion in 1972 and edited key texts in the *Petite antholgie du cinéma* series in 2001. See *La politique des auteurs. Les entretiens* (Petite anthologie des Cahiers du cinéma, No. 5), Paris, Les Cahiers du cinéma, 2001 (1972) and Antoine de Baecque (ed.), *La politique des auteurs. Les textes* (Petite anthologie des Cahiers du cinéma, No. 4), Paris, Les Cahiers du cinéma, 2001.

50 Klaus Honnef, "Es kommt der Autorenfotograf. Materialien und Gedanken zu einer neuen Ansicht über die Fotografie," in *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie*, op. cit., p. 13.

51 Ibid., p. 10.

schema, pursued throughout the text to legitimate photography: the notions of authorship and the concept of autonomy.[52]

Fig. 9: Illustration of *In Deutschland*: Eugène Atget's "visionary view" of Paris and August Sander's "staged and self-staged" men (captions by Klaus Honnef, page 24 – 25)

Paradoxically, Honnef pursues his reasoning by stating that photography is necessarily connected with documentation, although his theory of authorship derives from fiction. Interestingly, Honnef's project implies both an emphasis on documentation, displayed in the text through the term objectivity, and the idea of handwriting or authorship, mediated through the notion of subjectivity. The first step of his demonstration, stemmed by various illustrious references, discusses the supposed characteristics of photography, interpreting their implications for the conception of the medium. Using Kracauer, he states that "photography has a privileged affinity with non-staged reality,"[53] emphasizing the objective or documentary ambition of photography, while evacuating the importance of experimental models. While he mentions Raoul Hausmann and László Moholy-Nagy and their ability to question the medium in the beginning of his text,[54] these examples are rapidly evacuated; similarly, photographs that might possess aesthetic qualities but that lack artistic intent are not mentioned again

52 The notion of authorship in relation with Honnef's text is associated on a regular basis with Susan Sontag's author theory advocated in *On Photography* (1977, translated into German in 1978 by the Carl Hanser Verlag, Munich). But the American writer is not mentioned by him explicitly or implicitly. Thomas Weski for example argues that "[b]y analogy with Susan Sontag's use of the term *auteur* in her book *On Photography*, Klaus Honnef called these photographers *Autorenfotografen*, a term which also awakened associations with the *Autorenfilme*," subordinating the importance of cinema to Sontag's concept, more commonly used in photography-specific discourse. See Thomas Weski, "Too Old to Rock'n'Roll: Too Young to Die. A Subjective View of German Photography of the Last Two Decades," in Joachim Brohm and Tim Rautert (ed.), *Joachim Brohm. Kray*, Oberhausen, Edition der Hochschule für Grafik und Buchkunst Leipzig/ Plitt Verlag, 1995, p. 111 – 112.

53 Siegfried Kracauer, *Theorie des Films. Die Errettung der äusseren Wirklichkeit*, Frankfurt, Suhrkamp, 1964, p. 45. Quoted in Klaus Honnef, "Es kommt der Autorenfotograf. Materialien und Gedanken zu einer neuen Ansicht über die Fotografie," op. cit., p. 14.

54 Ibid., p. 10.

in the text.[55] Honnef alludes to the "beauty" of aerial photography noticed by Beaumont Newhall,[56] to differentiate his paragon from vernacular or automated images.[57] He also questions his colleagues' work – for instance, Wolfgang Kemp's *Foto-Essays* (1978) – for their too broad understanding of what artistic photography might be. Kemp's chapter "Das neue Sehen: Problemgeschichtliches zur fotografischen Perspektive," which discusses Rodchenko, Moholy-Nagy, Strand and the cover image of "Es kommt der neue Fotograf" in relation to perspective issues, is to a certain extent associated with formalistic experiments imitating painting. Although Honnef acknowledges the interest of "untypical" perspectives, he condemns "all types of photographs trying to imitate painting."[58] The almost abstract appearance of some of the images (e.g., Moholy-Nagy's *Blick vom Funkturm*, Berlin, 1928), clearly hinder the constitution of the coherent object Honnef aims to sketch out. As a matter of fact, Kemp actually stresses Rodchenko's emphasis on the "documentary value" of his images and the fact that he aims to move away "as far as possible from painting".[59] But Kemp does so *against* the artistic value of the photographs; he quotes Rodchenko again, stressing that he aims not to create "photo-paintings [Fotogemälde], but photo-moments [Fotomomente], with documentary value, and not artistic value,"[60] which undermines Honnef's purpose.

After rejecting irrelevant photographers or scholars, Honnef carries on his justification of documentary photography by discussing its most important practitioners (from Eugène Atget, Jacob Riis, Lewis Hine and Heinrich Zille to August Sander, Robert Flaherty, Jean-Marie Straub or the Bechers). According to Honnef they are not led by aesthetic motives but through "intensive observation," just like scientists.[61] He argues that documentary is art because of its lack of artistic endeavor. He doesn't oppose art and document though, which constitutes quite an original position at that time and one of the early attempts of the formalization of a position best embodied by the Bechers themselves, between these "two" fields. But while stressing the impact of objectivity, Honnef highlights the limitation of photographic representation, the fact that the image is not an equivalent of what it shows, but an isolated, frozen moment,[62] imbued with a certain degree of autonomy:

55 One of the rare texts reflecting upon Honnef's endorsement of documentary photography as an art form and the evacuation of deranging models (i.e., Moholy-Nagy) can be found in *Der Rote Bulli* project. See Gerald Schröder, "Positionings. On the Reception of Bernd and Hilla Becher's Photographic Oeuvre in the Federal Republic of Germany 1965 – 1990," in Werner Lippert and Christoph Schaden (ed.), *Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography*, op. cit., p. 311 – 317.

56 Klaus Honnef, "Es kommt der Autorenfotograf," op. cit., p. 14.

57 Beaumont Newhall discusses automatically recorded aerial photography, for instance. See Beaumont Newhall, *History of Photography, from 1839 to the Present*, New York, The Museum of Modern Art, 1982 (1964).

58 Klaus Honnef, "Es kommt der Autorenfotograf," op. cit., footnote 38, p. 31.

59 Wolfgang Kemp quoting Rodchenko (no reference), in Wolfgang Kemp, *Foto-Essays*, op. cit., p. 54.

60 Kemp quotes Rodchenko from R. Sartori and H. Rogge, *Sowjetische Fotografie 1928 – 1932*, Munich, 1975, p. 117. Ibid., p. 57 – 58.

61 Klaus Honnef, "Es kommt der Autorenfotograf," op. cit., p. 21.

62 Ibid., p. 16.

> *The objectivity of photography imbues it with strength and credibility, lacking in any other type of visual art. Whatever critical objections we might have, we have to believe in the existence of the represented object, of the actually represented, which means believing in something that has acquired a presence in time and space. Photography benefits from the transfer of the reality of the object onto its reproduction.*[63]

That autonomous character can be expressed or used in two distinct manners by the photographer: either he has to intervene in the image production process to be able to document what he aims to record, or he possesses a certain degree of liberty in the process, as "authenticity and vision are not mutually exclusive."[64] Using numerous examples, Honnef legitimates these practices, stressing that they do not endanger the documentary prospect. We shall only pursue a few of them, to illustrate these two positions. Honnef discusses Jacob Riis' work, legitimating his use of artificial light and the staging of his images: "Jacob Riis was forced to 'stage' [quotation marks Honnef] many of his images because his technical equipment didn't allow snapshot photography."[65] Authenticity is thus guaranteed by technical limitations, an argument stemmed by the statement that "any photographic image feels somehow unsound [befremdlich] anyway."[66] The case of Robert Flaherty, illustrating a certain autonomy of the (author) cinematographer, proceeds similarly. Honnef argues that the filmmaker, well known for his staged documentary films (most prominently *Nanook of the North* [1922]), aims to mediate a "vision of innocence and untouched character."[67] The vision therefore legitimates the manipulation or staging.[68] From these examples emerges the concept of "subjective moment," which is found in the contemporary text "Das subjektive Moment in der Dokumentar-Fotografie"[69] (1978). The touch or handwriting, legitimated through the evocation of the "*politique des auteurs*," is a metaphor Honnef will repeatedly use. On the cover of volume 18 of *Kunstforum International* on photography edited by Honnef, a pen seemingly annotating a photograph symbolizes the idea of Handschrift and authorship, suggesting the importance of the concept in Honnef's thought.

63 "Die Objektivität der Fotografie verleiht ihr eine Stärke und Glaubhaftigkeit, die jedem anderen Werk der bildenden Kunst fehlt. Welche kritischen Einwände wir auch immer haben mögen, wir sind gezwungen, an die Existenz des repräsentierten Objektes zu glauben, des tatsächlich repräsentierten, das heißt, des in Zeit und Raum präsent gewordenen. Die Fotografie profitiert von der Übertragung der Realität des Objektes auf seine Reproduktion." André Bazin, quoted by Honnef from *Was ist Kino ?*, Cologne, 1975, p. 24 ff. Ibid., p. 16.

64 Ibid., p. 25.

65 Ibid., p. 16.

66 Ibid., p. 16.

67 Ibid., p. 25.

68 The notion of "vision" that Honnef uses almost literally describes Andreas Gursky's understanding of the concept of documentary. See especially chapter "Complex Composites. Andreas Gursky's generic world,".

69 Klaus Honnef, "Das subjektive Moment in der Dokumentar-Fotografie. Materialien und Gedanken zu einer neuen Ansicht über Fotografie," *Kunstforum International*, Vol. 41, 1980. Initially published in Klaus Honnef, Renate Heidt and Barbara Kückels (ed.), *Schlaglichter. Eine Bestandsaufnahme aktueller Kunst im Rheinland*, exhibition catalogue (Rheinisches Landesmuseum, Bonn, 1979), Cologne, Rheinland Verlag, 1979.

Honnef's argumentation inscribes his project in a pre-existing genealogy of now recognized photographers. It could serve the purpose of an author theory as it is, and validly circumscribes strategies or positions, which enter his particular canon. But Honnef further strengthens his argument with the interpretation of a specific use of the photographic image, with important implications for Düsseldorf photography: serial imagery. In the 1970s, Honnef was as fascinated by the "shitty" (sic) quality of images of conceptual photographers, which allowed a critical stance toward the medium,[70] as he was appalled by the "over-aestheticized" documentary photography advocated by John Szarkowski at the MoMA.[71] His main criticism – much harsher in a 2009 interview than in the original text of 1979, where he only mentions Szarkowski in a note[72] – primarily focuses on the individual aspect of such images: to him, Einzelbildfotografien [single photographs] stand for aesthetic autonomy and enact a rapprochement with painting, forsaking documentary value.[73] Their main focus is on visual effect, engendering an "advertising aesthetic" even in images of poverty [Elendbilder].[74] Comparative or analytical strategies – Honnef mentions Eadweard Muybridge or Matthew Brady's portraits – constitute the sole legitimate position, again emphasizing the need for careful observation and a scientific approach.[75]

A further aspect of his theory resides in the sentiment the relationship with reality conveys through the image: melancholy and the idea of loss and decline – in particular through the recurring theme of industrial architecture, which constitutes an important topos in Honnef's text – are key parameters of his understanding of author photography, which becomes a witness of the present and, to a certain extent, an announcer of the future. Atget mediates "the sadness about the ramping downfall of the pre-industrial era," and Sander documents "the state of a society, that produced national-socialist terror."[76] A documentary depiction mediating a sense of melancholy constitutes the dominant parameters of Honnef's vision of documentary photographers as artists. Bernd and Hilla Becher, who "succeed in the art field

70 See Interview of Klaus Honnef by Christoph Schaden, op. cit, p. 195.

71 The Swiss magazine *Camera*, which Honnef reads and repeatedly quotes, constitutes one of the main diffusion vectors of Szarkowski's curatorial practice in Europe; Honnef also mentions his "repelling" exhibition shown at the *Photokina*. See interview of Klaus Honnef by Christoph Schaden, op. cit, p. 195.

72 He mentions Szarkowski's book *Looking At Photographs*, New York, 1973 in a footnote. See Klaus Honnef, "Es kommt der Autorenfotograf," op. cit., p. 19 and footnote 51, p. 31.

73 Ibid., p. 19 – 20.

74 Interview of Klaus Honnef by Christoph Schaden, op. cit., p 195. It is difficult to exactly pinpoint what Honnef means by over-aesthecized documentary photography. In contradiction of what he seems to suggest, not only has the MoMA played an important role in the legitimation process of photography but has also advocated the documentary photography as As an artistic form. (e.g., *New Documents* with Diane Arbus, Lee Friedlander and Garry Winogrand, 1967). Although Szarkowski's modernist conception of photography will soon be criticized by various scholars, his overall attempt to legitimate the medium encompasses Honnef's own endeavor.

75 Klaus Honnef, "Es kommt der Autorenfotograf," op. cit., p. 21. Honnef's retrospective statement in 2010 on the "anti-aesthetic" stand of the "bad" and "blurry" photographs of conceptual artists somehow contradicts that position and reveals a non-resolved indefiniteness between photographers and conceptual artists using photography, exhibited indistinctively in *In Deutschland* (1979) or in *Schlaglichter* (1979). Interview of Klaus Honnef by Christoph Schaden, op. cit., p. 195 – 196.

76 Klaus Honnef, "Es kommt der Autorenfotograf," in op. cit., p. 25.

rather than in photography circles,"[77] thus constitute the prime example of observers of the present, whose subjective stance doesn't derive from formal characteristics but from a resonance with reality. Quoting Howard Hawks, Honnef stresses the neutrality of the approach (here again the documentary intent resonates with fiction[78]): "I shoot without detour. There are no camera tricks. [...] The audience sees what I see,"[79] but "individual vision" and "individual themes" [Bildthema][80] guarantee the "artistic" vision. While clearly contributing to the legitimation of photography as an art form in general, Honnef's project clearly contributes to the conditions of possibility of the Düsseldorf School, whose photographers enact many of the features he circumscribed to define the German documentary paradigm. But, ironically, Düsseldorf photography, which Honnef will support in various forthcoming publications (e.g., *Kunstforum International*, Vol. 41, No. 5, 1980, special issue on documentary photography edited by Honnef) or curatorial projects (e.g., exhibition *Schlaglichter. Eine Bestandsaufnahme aktueller Kunst* im Rheinland, Rheinisches Landesmuseum Bonn, Fall 1979, curated by Honnef), will become such a prominent label, that numerous German documentary photographers will eventually disappear from the spotlight. Several photographers initially supported by Honnef (e.g., Heinrich Riebesehl) or emerging in other contexts (e.g., Joachim Brohm or Manfred Hamm) will only be re-discovered two decades later.

The exhibition

While *Fotografie nach der Fotografie* will travel to numerous locations in Europe and the United States, *In Deutschland* will only be shown in the Rheinisches Landesmuseum Bonn for a limited time during the summer 1979, from June 23 to July 29. The exhibition constitutes a point of convergence of interest for German documentary photography and is one of the first manifestations to gather its young generation. "*In Deutschland* initiated the worldwide career of the Becher School," Klaus Honnef emphatically (and retrospectively) concludes in an interview with Christoph Schaden in 2010.[81] If Honnef's own account ought obviously to be pondered considering his role in the exhibition, the show clearly constitutes an eminently interesting object of study, where the interest of photography as an art form and a conscious attempt to position young German photographers in that context merge. Retrospectively, it has further to be argued that the exhibition of four Becher pupils, which can be found in numerous editorial and curatorial projects directed by Klaus Honnef since that year, played a central role in the constitution of the Düsseldorf School. Originally,

77 Ibid., p. 26.

78 Honnef's last note explains his use of film theory, whose differences with photography he acknowledges. But besides the concept of author, the use of cinema sounds like an implicit attempt to deny art criticism and theory the role as an instance of legitimation of photography. Ibid., p. 32.

79 Ibid., p. 27.

80 Ibid., p. 29.

81 Interview of Klaus Honnef by Christoph Schaden, "'Wilhelm war nicht amüsiert darüber.' Ein Gespräch zum 70. Geburtstag über die Austellung *In Deutschland*," op. cit., p. 196.

the Bechers students weren't even invited to participate, though. Wilhelm Schürmann – in whose mind the idea of a collective exhibition of contemporary German photographers originated[82] – and Klaus Honnef had already made a selection of eleven young photographers, without Becher pupils. Honnef was keen to promote the German scene: "the art scene from the Rheinland is even more vivacious than in New York – Paris isn't even worth mentioning"[83] Honnef argues in a newspaper article on the exhibition *Schlaglichter* on artists of the Rheinland (Cologne, Düsseldorf, Aachen, etc.).[84] After Gabriele und Helmut Nothhelfer, who were supposed to participate, eventually declined, Bernd Becher submitted the idea to exhibit the photographs of four of his students at the Kunstakademie Düsseldorf: Tata Ronkholz, Candida Höfer, Thomas Struth and Axel Hütte.[85] Their work "blew [Honnef] away,"[86] and he integrated them into the project, much to the distaste of Schürmann.[87] The project thus became one of the first exhibitions of students of the Bechers outside the academy,[88] before the early exhibitions of Konrad Fischer (e.g., Candida Höfer, 1982), and ten years before the collective exhibition at Johnen and Schöttle Gallery in Cologne, which marks the beginning of the acknowledgement of the idea of the Becher school, formalized by Isabel Graw in *Flash Art International*.[89]

While the exhibition clearly represents an important discursive convergence point advocating German documentary forms and legitimating photography as art, a movement in which Klaus Honnef has played a proactive role, the exhibition itself can serve as a source for understanding the implicit criteria defining that particular paragon to whose definition he contributed. As Christoph Schaden, one of the few scholars who closely studied *In Deutschland*, argues, the exhibition translates the Becher's ability to merge "documentary" and "conceptual" features of photography, an association that considerably influenced Honnef's "photodocumentary gaze."[90] The photographs of Johannes Bönsel, Ulrich Görlich, Candida Höfer, Axel Hütte, Wilmar Koenig, Hans-Martin Küsters, Martin Manz, Hartmut Neubauer,

82 Christoph Schaden, "'Denken wir nicht überflüssig, sondern notwendig.' Anmerkungen zur epochalen Photoausstellung *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie* (1979)," op. cit., p. 181.

83 Klaus Honnef quoted in Raimund Hoghe, "Brief gegen Bilder," review of the exhibition "*Schlaglichter*" at the Bonner Landesmuseum, in *Die Zeit*, No. 40, September 28, 1979, p. 42. Available at www.zeit.de/1979 /40/brief-gegen-bilder, accessed on January 15, 2018.

84 See Klaus Honnef, Renate Heidt and Barbara Kückels (ed.), *Schlaglichter. Eine Bestandsaufnahme aktueller Kunst im Rheinland*, exhibition catalogue (Rheinisches Landesmuseum, Bonn, 1979), Cologne, Rheinland Verlag, 1979.

85 Christoph Schaden, "'Denken wir nicht überflüssig, sondern notwendig.' Anmerkungen zur epochalen Photoausstellung *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie* (1979)," op. cit., p. 182 – 183.

86 See interview of Klaus Honnef by Christoph Schaden, op. cit., p. 196.

87 Ibid., p. 196.

88 Honnef also edited a postcard portfolio in 1982, with works from Candida Höfer, Axel Hütte, Thomas Ruff, Wilhelm Schürmann and Thomas Struth. Klaus Honnef (ed.), *Junge deutsche Fotografen. 1980 – 1982*, Cologne, Postkartenverlag der Gebr. König, 1982.

89 Isabel Graw, "Bernhard Becher's Students," *Flash Art*, No. 143, Nov./Dec. 1988, 123 ff.

90 Christoph Schaden, "'Denken wir nicht überflüssig, sondern notwendig.' Anmerkungen zur epochalen Photoausstellung *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie* (1979)," op. cit., p. 183.

Fig. 10: Wilhem Schürmann, *Aachen*, 1978, printed in the catalogue *In Deutschland*, p. 178

Fig. 11: Thomas Struth, *Düsseldorf*, 1978, printed in the catalogue *In Deutschland*, p. 81 (image not labeled in catalogue)

Heinrich Riebesehl, Tata Ronkholz, Michael Schmidt, Wilhelm Schürmann and Thomas Struth possess an evident formal coherence and depict a limited range of subjects – architecture (Fig. 10 and Fig. 11), landscape (Fig. 12), portraits and people in context (Fig. 13) – despite the fact that they come from various backgrounds and schools. The style of their images could be interpreted as filling the gap between "reportage" and "art photography":[91] Schaden for instance mentions various newspapers puzzled by the status of these images, whose construction dodges common identification. Wilfried Wiegand in the *Frankfurter Allgemeine Zeitung* ("Die verweigerte Reportage," July 23,

91 Ibid.

1979) reflects upon that character and acknowledges that only their serial construction, and the confrontation and juxtaposition of multiple images actually allow a documentary stance. Wiegand stresses the fact that the "sometimes boring" individual images therefore ought to be either gathered in a book or exhibited as a group in a museum,[92] revealing the serial strategy central to numerous photo-conceptual artists and the Bechers themselves.

Fig. 12: Ulrich Görlich, *Untitled*, n.d., printed in the catalogue *In Deutschland*, p. 118

For the exhibition, all photographers indeed produced a series of nine to eighteen images reproduced on prints of approximately twenty by thirty centimeters, hung horizontally next to one another. Formally, they not only echo the Bechers' approach – some of Wilhelm Schürmann's houses are reminiscent of the couple's "anonymous sculptures" as are Dan Graham's minimal *Homes for America* – but also surprisingly prefigure various series of Düsseldorf photographers, in form and conceptual approach: Ulrich Görlich's geometrical close-ups of forests (Fig. 12) inescapably prompt a comparison with Thomas Struth's *Paradise* series. Although the comparison of documentary style of the exhibition's body of work with Düsseldorf photography isn't as such necessary to understand the historical importance of the exhibition, it is intriguing to realize that only few of the presented photographers became as successful as the Bechers' students. Except Michael Schmidt, none have experienced similar careers, and the importance of figures such as Heinrich Riebesehl have only been acknowledged very recently.[93] Furthermore, the subjective "counterpart" of *In Deutschland, Vorstellung und Wirklichkeit. Sieben Aspekte*

92 Wilfried Wiegand, "Die verweigerte Reportage," *Frankfurter Allgemeine Zeitung*, July 23, 1979, quoted in Christoph Schaden, ibid., p. 184.

93 See Christoph Schaden, "'Denken wir nicht überflüssig, sondern notwendig.' Anmerkungen zur epochalen Photoausstellung *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie* (1979)," op. cit., p. 184 – 185.

Fig. 13: Hans-Martin Küsters, *Würselen*, 1978, printed in the catalogue *In Deutschland*, p. 184

subjektiver Fotografie, shown the following year in the Museum Schloß Morsbroich in Leverkusen,[94] didn't have the same impact, as if the emergence of photography as an art form were necessarily connected with a documentary tradition[95] and an attempt to differentiate itself from other fields of visual arts (e.g., painting). The coherence of the German documentary paradigm, with the emergence of a lineage of photographers and discourses, seems to have excluded subjective forms of photography in that emerging period, built in a second step *from* documentary forms, as the tableau-like images of Andreas Gursky or Thomas Struth of the 1990s attest.

94 Esther Ruelfs, "Zeitgenössische Deutsche Fotografie. Stipendiaten der Alfred Krupp von Bohlen und Halbach-Stiftung," in Ute Eskildsen and Esther Ruelfs (ed.), *Zeitgenössische Deutsche Fotografie. Stipendiaten der Alfred Krupp von Bohlen und Halbach-Stiftung*, exhibition catalogue, Göttingen, Folkwang Museum and Steidl, 2018. Available at http://www.fotokritik.de/artikel_120.html, accessed on June 27, 2018.

95 Esther Ruelfs argues that the focus on documentary forms in the 1980s might also have been influenced by the emerging means of financing of photography such as grants, primarily focused on "political or social" themes (e.g., "Youth in the Federal Republic of Germany" for the Alfred Krupp Grant in 1982), while experimental or "formal-aesthetic" works were excluded. See Esther Ruelfs, "Zeitgenössische Deutsche Fotografie. Stipendiaten der Alfred Krupp von Bohlen und Halbach-Stiftung," op. cit.

2 PHOTOGRAPHY HISTORY AND DOCUMENTARY PHOTOGRAPHY HISTORY

While the theoretical fundaments of an author theory connected with documentary forms are exemplarily laid out in "Es kommt der Autorenfotograf. Materialien und Gedanken zu einer neuen Ansicht über die Fotografie," their diffusion and reception underlie a much broader curatorial and editorial project carried out by Honnef from the early 1970s to the early 1980s. Besides the various exhibitions of documentary photographers – the last pages of the *In Deutschland* catalogue mention his Zille, Renger-Patzsch and Krull shows[96] – Honnef oversees several issues of *Kunstforum International* on photography, carrying on his project in which the shift between author photography (i.e., *Kunstforum International*, Vol. 022, 1977, titled "150 Jahre Fotografie") and documentary author photography (i.e., *Kunstforum International*, Vol. 041, 1980, titled "Dokumentarfotografie") increasingly appears. At the time, Honnef's endeavor meets an increasingly vivid scene of photographers, gallery owners, collectors, editors and curators. Numerous scholars have also responded and participated in the emerging acknowledgement of the medium, addressing the ongoing legitimation process by either discussing its validity, or more proactively stating defining parameters of photography as art, similar to other cultural contexts.[97] Wolfgang Kemp's texts "Anmerkungen zur Legitimationsproblematik der Fotografie" (1981)[98] or "Neue Einschätzung der sogenannten Kunstfotografie vor und nach der Jahrhundertwende" (1978),[99] for example, address issues of legitimacy, while Rolf H. Krauss' *Photographie als Medium. Zehn Thesen zur konventionnellen und konzeptionellen Photographie*[100] assesses its value, from the (endorsed) position of a collector and promoter of photography as an autonomous art form. Numerous important texts on photography are published in this timespan, either perpetrating the concept of author photographers stemming from Beaumont Newhall's *Photography,*

96 Klaus Honnef, *In Deutschland. Aspekte gegenwärtiger Dokumentarfotografie*, op. cit., p. 222 – 223.

97 Many of the most influential photo-theoretical works, often revolving around the newly defined notion of index, were written at this very moment. See for example Rosalind Krauss, "Notes on the Index. Seventies Art in America, Part I and II" (New York, 1977), Susan Sontag, *On Photography* (New York, 1977), Roland Barthes, *La chambre claire* (Paris, 1980), Allan Sekula, "On the Invention of Photographic Meaning" (London, 1982), Victor Burgin (ed.), *Thinking Photography* (London, 1982), Philippe Dubois, *L'acte photographique* (Paris, 1983). See for example Katia Schneller, "Sur les traces de Rosalind Krauss. La réception française de la notion d'index. 1977 – 1990," op. cit. and more generally Bernd Stiegler, *Theoriegeschichte der Photographie* (Bild und Text), op. cit. or James Elkins (ed.), *Photography Theory*, New York, London, Routledge, 2007.

98 Wolfgang Kemp, "Anmerkungen zur Legitimationsproblematik der Fotografie," in Erika Kiffl (ed.), "Ist Fotografie Kunst? Gehört Fotografie ins Museum?" Internationales Fotosymposium 1981 Schloß Mickeln bei Düsseldorf, Munich, Mahnert-Lueg Verlag, 1982.

99 Wolfgang Kemp, "Neue Einschätzung der sogenannten Kunstfotografie vor und nach der Jahrhundertwende," in Wolfgang Kemp, *Foto-Essays zur Geschichte und Theorie der Fotografie*, Munich, Schirmer/Mosel, 1978.

100 Rolf H. Krauss, *Photographie als Medium. 10 Thesen zur konventionellen und konzeptionellen Photographie*, Ostfildern, Cantz Verlag, 1995 (1979).

1839 – 1937. A Short Critical History (New York, MoMA, 1937)[101] or starting to build a critical history of the medium and its uses. The first of three volumes of the influential *Theorie der Fotografie*, edited by Wolfgang Kemp, was published in 1979. Many histories and lexica – such as Volker Kahmen's *Die Fotografie als Kunst* (1973),[102] Fritz Kempe's *Fotografie zwischen Daguerreotypie und Kunstfotografie* (Hamburg, 1979), Ursula Peter's *Stilgeschichte der Fotografie in Deutschland 1839 – 1900* (Cologne, 1979), Floris M. Neusüss' *Fotografie als Kunst – Kunst als Fotografie/Photography as Art – Art as Photography* (Dumont Buchverlag, Cologne, 1979) or Jörg Kriechbaum's *Lexikon der Fotografie* (Frankfurt/Main, 1981)[103] – are written during these years. In 1980, Rolf H. Krauss, Frank Heidtmann and Hans-Joachim Bresemann publish the seven-hundred-page, bilingual (German/English) *Die deutsche Photoliteratur 1839 – 1978*, synthetizing the recent effort to acknowledge photography and its German historicization.[104]

Schrimer/Mosel, the first author photography book publisher in Europe, founded in 1974,[105] also plays an important role in the acknowledgement and distribution of photography in that decade. Founded by Lothar Schirmer and Erik Mosel, the art book publisher issues August Sander's *Rheinlandschaften* in 1975, *Antlitz der Zeit* in 1976 and *Menschen des 20. Jahrhunderts* in 1980, Bernd and Hilla Becher's *Fachwerkhäuser des Siegener Industriegebietes* in 1977 and Moholy-Nagy's *Fotos und Fotogramme* in 1978, which becomes its first international sales hit.[106] The company's financial success in its early years and its survival is connected with the publication of the catalogue of Heinrich Zille's newly discovered photographs,[107] shown at the Bonner Landesmuseum in 1975, and curated by Klaus Honnef. It was a huge sales success – more than 50,000 copies were sold – and was

101 See Olivier Lugon, "Critical Review of *Nouvelle Histoire de la photographie," Critique d'art*, No. 5, Spring, 1995, Marta Braun, "Beaumont Newhall et l'historiographie de la photographie anglophone," *Etudes photographiques*, No. 16, May 2005 and Douglas Crimp, "The Museum's Old, The Library's New Subject," in Richard Bolton (ed.), *The Contest of Meaning. Critical Histories of Photography*, Cambridge (MA), MIT Press, 1989.

102 Volker Kahmen, *Fotografie als Kunst.* Tübingen, Verlag E. Wasmuth, 1973. The book has surprisingly been translated to English and to French in 1973 and 1974 already. Volker Kahmen, *Photography as Art*, trans. Brian Tubb, London, 1973 and Volker Kahmen, *La photographie est-elle un art?*, trans. Anne Frejer, Paris, Chêne, 1974.

103 See Wolfgang Kemp's bibliography for the chapter "1970/80 bis zur Gegenwart," in Wolfgang Kemp, *Geschichte der Fotografie. Von Daguerre bis Gursky*, Munich, C. H. Beck, 2011, p. 125 – 126.

104 Rolf H. Krauss, Frank Heidtmann and Hans Joachim, *Die deutsche Photoliteratur 1839 – 1978*, Munich/London/New York/Paris, KG Saur, 1980.

105 See "Kleine Verlagsgeschichte 1974 – 2014," at www.schirmer-mosel.de/homed1/about_sm.htm, accessed on January 9, 2018.

106 The book is sold in Germany, the United Kingdom, France, the Netherlands and the United States. Ibid.

107 An important number of photographic negatives of Heinrich Zille, primarily known as illustrator and painter, was discovered in 1966 in his family's apartment in Charlottenburg. A representative body of work was acquired by the Berlinische Galerie in 1987. See for example "Photos. Konkurrenz um Zille," *Der Spiegel*, No. 39, 1975, p. 124, Winfried Ranke (ed.), *Heinrich Zille. Photographien Berlin 1890 – 1910*, Munich, Schirmer/Mosel, 1975. Concerning the debate on the origin and attribution of the photographs, see Detlef Zille, "Heinrich Zille und die Fotografie. Die zweifelhafte Zuschreibung von Fotografien," in *Fotogeschichte*, No. 130, 2013 and Pay Matthis Karstens, "[...] Trotzdem ich das Haus photogr. wollte [...]. Unbekannte und unbeachtete Belege der fotografischen Tätigkeit Heinrich Zilles," *Fotogeschichte*, No. 130, 2013.

"Schirmer/Mosel's *de facto* grounding book."[108] Over time, Schirmer/Mosel published six books on Blossfeldt (edited by Jürgen and Ann Wilde), twelve on August Sander, sixteen on Henri Cartier-Bresson, three on Stephen Shore, four on Walker Evans and nineteen on the Bechers.[109] But it also edited various books on the theory and history of photography, such as Kemp's *Foto-Essays* in 1978 and his *Theorie der Fotografie* series between 1979 and 2000 (see Fig. 18). In a second "legitimation" step, Schirmer/Mosel eventually became the unofficial editor of the Düsseldorf School since the 1990s (see Fig. 15 – 17).

Fig. 14: *Bernd and Hilla Becher. Fachwerkhäuser* (1980)
Fig. 15: *Thomas Ruff. Fotografien 1979 – 2011* (2012)
Fig. 16: *Thomas Struth. New Pictures from Paradise* (2002/2017)
Fig. 17: *Die Düsseldorfer Photoschule* (2009)

By its thirty-fifth year of existence in 2009, Schirmer/Mosel had published fourteen books on Thomas Struth, twelve on Candida Höfer, nine on Axel Hütte, five on Jörg Sasse, four on Elger Esser, two on Andreas Gursky, two on Laurenz Berges, one on Thomas Ruff (*Nudes*), one on Simone Nieweg, three on the Düsseldorf School and twenty on history and theory of photography, which led to Lothar Schirmer's statement that "[he] became *à la longue* the publisher of [Bernd Becher's] professorship."[110] The company thus played an important role both as distributor of documentary photography in general and as advocate of the Düsseldorf School more specifically. As Rolf H. Krauss points out, Schirmer/Mosel also played an important role in the recognition of photography by art history as a discipline. While the journal *Kritische Berichte* discussed photography in the academic field through articles on photography exhibitions and catalogues – Herbert Molderings contributed texts on August Sander's *Rheinlandschaften* (1975) and to the Heinrich Zille exhibition and catalogue

108 See "Interview of Lothar Schirmer by Arno Widmann," *Berliner Zeitung*, No. 75, March 29 – 30, 2014, p. 4 – 5 and Lothar Schirmer, "A Short History of Schirmer/Mosel Publishers," Munich, March 2014. Available at http://www.schirmer-mosel.de/homed1/pdf/Verlagsgeschichte_SM_2014_e.pdf, accessed on June 27, 2018.

109 See *35 Jahre Schirmer/Mosel. Die Bibliographie aller Titel 1974 – 2009*, Munich, November 2009. Available at www.schirmer-mosel.de/homed1/pdf/S_M_Biblio_gesamt.pdf, accessed on June 27, 2018.

110 Lothar Schirmer, "Düsseldorf verlegen und sammeln," in *Die Düsseldorfer Schule. Photographien aus der Sammlung Lothar Schirmer*, op. cit., p. 9.

(1975)[111] –, Winfried Ranke's text for the Zille catalogue and Wolfgang Kemp's essay for the Sander catalogue constitute important contributions to the history and theory of photography.[112]

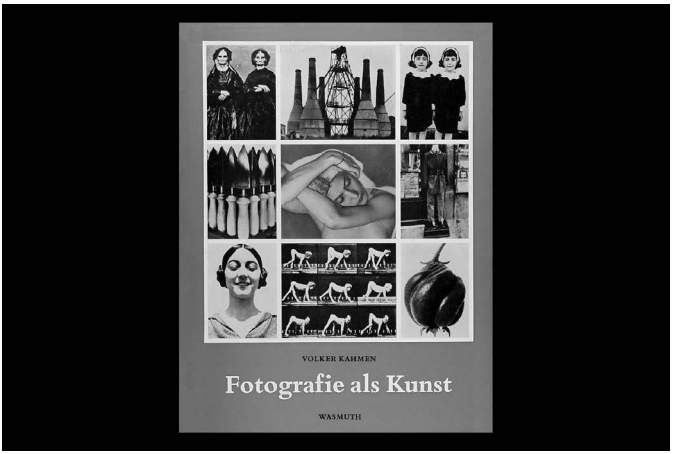

Fig. 19: Cover of Volker Kahmen, *Fotografie als Kunst* (Tübingen, Verlag E. Wasmuth, 1973)

Although most of these 1970s projects clearly seek to institutionalize photography – or reflect its ongoing legitimation process – a differentiation ought to be established between discourse advocating photography in general, which encompasses undertakings that support the documentary more specifically. While Schirmer/Mosel and the Wilde couple have played a central role in exhibiting and spreading documentary photography, they also address other types of photography. Schirmer/Mosel published various artists and photographers (Joseph Beuys, Cy Twombly and Cindy Sherman are among the artists with the most books), but they also publish illustrative or "beautiful" photography books on four fields outside the strictly artistic context: cinema, pop music, fashion and erotica. The numerous projects of that period, which address photography as a whole, obviously contribute to the establishment of documentary forms as well. Volker Kahmen's *Die Fotografie als Kunst* (1973) seems to be one of the first documented occurrences of the juxtaposition of an image of the Bechers' and of August Sander (Fig. 19) – a "stunning" formal acquaintance Klaus Honnef will explore in the future, exhibiting the work of these photographers in the "Sander/Becher" exhibition at the Permanent Representation of the Federal Republic of Germany in Berlin, in 1980 (Fig. 20).[113] But it also clearly has to be posited as a general

111 Herbert Molderings, "August Sander. Rheinlandschaften," in *Kritische Berichte*, Vol. 5/6, 1975 and Herbert Molderings, "Berlin und die Jahrhundertwende. Winfried Ranke: Heinrich Zille Photographien Berlin 1890 – 1910," *Kritische Berichte*, Vol. 1, 1976. Quoted in Rolf H. Krauss, *Walter Benjamin und der neue Blick auf die Photographie*, op. cit., p. 125.

112 Rolf H. Krauss, *Walter Benjamin und der neue Blick auf die Photographie*, op. cit., p. 72 – 75.

113 See Gerald Schröder, "Positionings. On the Reception of Bernd and Hilla Becher's Photographic Oeuvre in the Federal Republic of Germany 1965 – 1990," in Werner Lippert and Christoph Schaden (ed.), *Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography*, op. cit., p. 310.

PUBLICATION AND EXHIBITION TIMELINE (SELECTION)

1969	*Bernd und Hilla Becher. Anonyme Skulpturen* exhibition at the Kunsthalle Düsseldorf.
1972	*Bilderschau* (slideshow) of Stephen Shore at *Photokina*, Cologne Steven Shore featured in *Camera* magazine. Ann and Jürgen Wilde create a photo gallery in Cologne. August Sander exhibition at Galerie Wilde, Cologne. Heinrich Riebesehl creates the Spectrum photo gallery in Cologne. Last issue of *Life* magazine.
1973	Volker Kahmen publishes *Fotografie als Kunst.*
1974	Rudolf Kicken and Wilhelm Schürmann create the Lichttropfen Gallery, Aachen. Klaus Honnef curates Bernd and Hilla Becher exhibition at the Rheinisches Landesmuseum, Bonn.
1975	Kicken Gallery exhibits Stephen Shore. Schirmer/Mosel publishes August Sander's *Rheinlandschaften.* Klaus Honnef curates Albert Renger-Patzsch show at the Rheinisches Landesmuseum, Bonn.
1976	Schirmer/Mosel publishes August Sander's *Antlitz der Zeit.* *Walker Evans* exhibition at the Kunsthalle Düsseldorf (with MoMA holdings). Bernd Becher accepts a teaching position at the Kunstakademie Düsseldorf. Klaus Honnef curates Karl Blossfeldt show at the Rheinisches Landesmuseum, Bonn. Klaus Honnef, "Die Arbeit des Fotografen," published in *Kunstforum.*
1977	Schirmer/Mosel publishes Bernd and Hilla Becher's *Fachwerkhäuser des Siegener Industriegebietes* and *Fotografie der 30er Jahre. Eine Anthologie.* *Stephen Shore. Fotografien* exhibition at Kunsthalle Düsseldorf. Klaus Honnef and Evelyn Weiss curate the first photography section in *documenta 6*, Kassel. The Bechers lend Stephen Shore images for *documenta 6*, Kassel. Lichttropfen Gallery re-named Kicken-Schürman.
1978	Schirmer/Mosel publishes Moholy-Nagy's *Fotos und Fotogramme.* Klaus Honnef curates *Eugène Atget (1857 – 1927): Das alte Paris* at the Rheinisches Landesmuseum, Bonn. Klaus Honnef and Wilhelm Schürmann curate *In Deutschland.* The presence of Becher students is instigated by Bernd Becher. Rolf H. Krauss publishes *10 Thesen zur konventionellen und konzeptionellen Photographie.* Voker Kahmen publishes *Lewis W. Hine: Kinderarbeit, USA um 1910.*
1979	Schirmer/Mosel publishes Wolfgang Kemp's *Foto-Essays zur Geschichte und Theorie der Fotografie.* Schirmer/Mosel publishes Wolfgang Kemp's *Theorie der Fotografie II (1912 – 1945).*
1980	Schirmer/Mosel publishes Wolfgang Kemp's *Theorie der Fotografie I (1839 – 1913).* Schirmer/Mosel publishes August Sander's *Menschen des 20. Jahrhunderts.* Sander/Becher exhibition the Ständige Vertretung der Bundesrepublik Deutschland, (East) Berlin. Atget exhibition at the Kicken Gallery.
1981	Schirmer/Mosel publishes Karl Blossfeldt's *Das fotografische Werk.* First issue of *Fotogeschichte*, founded by Timm Starl.
1982	Exhibition *Works by Young Photographers from Germany* at Art Galaxy Gallery (NYC) (Döhne, Höfer, Hütte, Ronkholz, Struth).
1983	Schirmer/Mosel publishes *Eisenkonstruktionen des 19. Jahrhunderts.* Schirmer/Mosel publishes Wolfgang Kemp's *Theorie der Fotografie III (1945 – 1980).*
1984	Schirmer/Mosel publishes Beaumont Newhall's *Geschichte der Photographie.*
1985	Schirmer/Mosel publishes Bernd und Hilla Becher's *Fördertürme/Chevalements/Mineheads*.
1986	Thomas Ruff creates the first large-format *Porträts.*
1987	Ute Eskildsen curates *Endlich so wie überall? Bilder und Texte aus dem Ruhrgebiet* at the Museum Folkwang Essen. Exhibition *Foto/Realismen: Ludger Gerdes, Candida Höfer, Daniel Poensgen, Thomas Ruff and Thomas Struth* at Villa Dessauer, Bamberg, 1987, Kunstverein, Munich, 1987 and Kunstforum Berlin-West, 1988.
1988	*Bernhard Becher's Students* exhibition at Johnen und Schöttle Gallery, Cologne.

Fig. 19: Timeline of events contributing to the legitimation of photography and the documentary discourse between the institutional consecration of the Bechers as artists to the first collective exhibitions of the "Becher School" (1969 – 1988)

history of photography acknowledging the cultural importance of the medium,[114] and not exclusively a part of the legitimation process of a German documentary photography paradigm.

Fig. 20: Exhibition "Sander/Becher," Ständige Vertretung der Bundesrepublik Deutschland, Berlin, 1980 (catalogue cover)

While we do not aim to address this discursive field as a whole – the history of the documentary discourse and the legitimation process of photography in Germany has yet to be written – we can nevertheless discuss numerous protagonists who inscribe German photography into a specific rhetoric. Even though Bernd and Hilla Becher showed their students images of Stephen Shore and the recently rediscovered Jacob Riis, Lewis Hine, Walker Evans and Eugène Atget and were prominently discussed by Honnef in "Es kommt der Autorenfotograf," it is predominantly, at least until very recently, a linear filiation with a German documentary tradition, which commentators have reflected upon when addressing Düsseldorf photography.[115] Klaus Honnef plays a central role as an author photography advocate and as a curator establishing a specific paragon – German documentary photography. As such, *In Deutschland* – created with the input of Bernd Becher, who

114 Wolfgang Kemp interprets the end of photography as a mass medium in the early 1970s – exemplified by the end of *Life* magazine in 1972, supplanted by television – as the condition of possibility of its elevation to an art form. See Wolfgang Kemp, *Geschichte der Fotografie. Von Daguerre bis Gursky*, op. cit., p. 90 – 92.

115 Christoph Schaden notes that despite numerous studies on Stephen Shore, his impact on German photography had until recently not been studied consequently. See Christoph Schaden, "To Be Sure, That Is Also the Expression of a Particular Vital Consciousness. On the Reception of Stephen Shore's Work in Germany 1972 – 1995," in Werner Lippert and Christoph Schaden (ed.), *Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography*, op. cit., p. 29 – 30.

promoted his students in the process – constitutes a strong discursive moment for the legitimation of the Düsseldorf School, even though it schematically proceeds in two steps: the texts written by Honnef legitimate the status of photography, while the exhibition establishes a more specific formal program. But Honnef's curatorial work more generally, especially the linking of discrete elements of a yet to be built history, reveals itself as extremely resilient. The juxtaposition of August Sander and the Bechers, or the re-actualization of nineteenth-century documentary photography during the *documenta 6*,[116] extends the numerous comparative projects of individual photographers. Klaus Honnef and Evelyn Weiss had curated a retrospective exhibition of photography for the sixth edition of the *documenta*, investigating the medium from its origins throughout the 1970s, exhibiting roughly eight hundred images.[117] The selection addressed three sections. "Spectrum of the medium" tackled the history of the medium through various categories, such as pioneers, portraits, fashion and society, landscape, city and architecture, industry and technology and war. "Photographic methods" showed reportage, thematic encyclopedic inventories and photographic analysis and comparative depictions. In the second section, many examples explicitly investigated a comparative stance: the Bechers were, for example, connected with Karl Blossfeldt, August Sander and Eadweard Muybridge.[118] The third section, "Reflection and extension of the medium," shows contemporary experimental forms, such as Hans-Peter Feldmann, Gordon Matta-Clark, Joseph Kosuth or Christian Boltanski. The curators did not explicitly situate photography in the context of art – "photography is at best a document," Honnef argued when commenting on Renger-Patzsch[119] –, and the show clearly focused on the depictive ability of the medium, rather than experimental forms. Despite its dodging of the question whether photography is art, Honnef nonetheless concluded the essay he wrote for the catalogue by saying that photographs "probably are artworks as a matter of principle."[120] Throughout the text, Honnef stresses the importance of the depictive power of the medium: "Photography is not a copy of reality, [...] but a formal and visual [Bildnerisch] transformation with its own sets of rules."[121] In his text for *In Deutschland* two years later, it is from these premise that he formulates the medium's artistic dimension. As several commentators have noted, both Otto Steinert's *Subjektive Fotografie* and

116 This will even lead to a clash and the eventual departure of Pontus Hultén from the committee. See Stefan Gronert, "Photograhische Emanzipation," in *Die Düsseldorfer Photoschule*, op. cit., p. 20 and Peter Sager, "Photographie und Video auf der *documenta 6*. Im Dschungel der Medien. In Kassel dominieren die technischen Bilder," *Die Zeit*, July 15, 1977. Available at http://www.zeit.de/1977/29/im-dschungel-der-medien, accessed on June 27, 2018.

117 See *documenta 6. Fotografie, Film, Video* (Vol. 2), exhibition catalogue (Kassel, Museum Fridericianum, 1977), 1977.

118 Ibid, p. 29, 94, 147.

119 Peter Sager, "Photographie und Video auf der *documenta 6*. Im Dschungel der Medien, in Kassel dominieren die technischen Bilder," op. cit.

120 Klaus Honnef, "Fotografie zwischen Authentizität und Fiktion," in *documenta 6. Fotografie, Film, Video* (Vol. 2), op. cit., p. 26.

121 Ibid.

Bauhaus photography are absent from the selection.[122] Although the curators did not make categorical statements on the relationship between art and documentary,[123] the exhibition shows a proclivity toward documentary forms. Most non-contemporary forms of photography, whose main aspiration lay outside documentation, were excluded from the show.

The re-actualization of historical models such as Muybridge, Atget and Sander causes an increased level of comparability within the whole field of photography and of German documentary photography more specifically, which produces a trans-historical grid. While not focusing solely on the documentary aspect, Kahmen had in 1973 already acknowledged its importance. As Gerhard Schröter notes, Kahmen inscribes the Bechers' work in that tradition, and more specifically "within the lineage of those photographers whom Walter Benjamin regarded as key figures,"[124] "a few artists [whose work] runs through [photography's] historical development like a red thread, artists who have (in Benjamin's terms) the quasi-scientific awareness of Muybridge via Atget, Sander, Blossfeldt, up to the Bechers."[125] Comparing the Bechers' work with Blossfeldt's, he quotes Benjamin again to conclude that an immanent power underlies their work, inscribing them in a genealogy similar to natural evolution: "*Natura non facit saltus* – nature does not make jumps."[126]

122 See for example Peter Sager, "Photographie und Video auf der *documenta 6*. Im Dschungel der Medien, In Kassel dominieren die technischen Bilder," op. cit. or Enno Kaufhold, "Fotografie 'und' Kunst. Bemerkungen zur Ausstellung 'Malerei und Photographie im Dialog' in Zürich und zur Abteilung Fotografie der *documenta 6* in Kassel," op. cit.

123 Ibid., p. 40.

124 Gerald Schröder, "Positionings. On the Reception of Bernd and Hilla Becher's Photographic Oeuvre in the Federal Republic of Germany 1965 – 1990," op. cit., p. 313.

125 Volker Kahmen, *Photography as Art*, op. cit., p. 35. Quoted in Gerald Schröder, "Positionings. On the Reception of Bernd and Hilla Becher's Photographic Oeuvre in the Federal Republic of Germany 1965 – 1990," op. cit., p. 313.

126 Volker Kahmen, *Photography as Art*, op. cit., p. 35.

3 THE REBIRTH OF DOCUMENTARY FORMS AND NEW GERMAN PHOTOGRAPHY

Through a multitude of agents – galleries (e.g., Lichttropfen), magazines (e.g., *Camera*[127] or *Volksfoto*[128]), collectors (e.g., Ana und Jürgen Wilde[129]), curators, editors, exhibitions (e.g., *documenta*), museums and grants – photography gained a new status throughout the 1970s, paving the way to a widespread acceptance of the medium both as an art form and as a popular practice. The latter development is, for example, attested by projects such as the *Volksfoto* magazine, which primarily focused on vernacular imagery, or Hans-Peter Feldmann's use of found photographs to create cheap, reproducible and anti-institutional art. But although an interest in all types of photographic practices in multiple fields emerged in the 1970s, concomitantly with its institutionalization and recognition, various personalities in general and Klaus Honnef in particular showed a proclivity for documentary forms. When Düsseldorf photography started to emerge in the early 1990s alongside digital photography, a coherent set of discourse had been established. While obviously multiple non-documentary photographers were active and recognized during that time, the idea of documentation reborn from the re-discovery of Sander, Evans or Blossfeldt, from the publication of Benjamin's key texts and from the confrontation with American color photography – a visual expression only adopted "tardily" by the young generation of German photographers – clearly sketches out a context in which non-subjective photography occupies an important role. The legitimation of photography seems to have been enacted by its primary function – to depict, "to reveal things as they are," which plays a central role in the reception of the Düsseldorf School.

127 The photography magazine founded in Lucerne in 1922 became particularly influential internationally under editor in chief Allan Porter (1965 – 1981) and was distributed in thirty-five countries. Its publication ended in 1981 and resumed in 2013. Most texts featured in Honnef's *In Deutschland* catalogue are taken from *Camera* issues between 1966 and 1979. See Nadine Olonetzky, *Ein Amerikaner in Luzern. Allan Porter und camera – eine Biografie*, Lucerne, Verlag Pro Libro, 2007 and Stephan Wehowsky, "Allan Porter und die Zeitschrift camera," www.journal21.ch. Available at http://www.journal21.ch/allan-porter-und-die-zeitschrift-camera, accessed on June 27, 2018.

128 Founded by Dieter Hacker and Andreas Selzer, *Volksfoto* published six issues between 1976 and 1981, focusing primarily on amateur photography. See Thomas Weski, "Too Old to Rock'n'Roll: Too Young to Die. A Subjective View of German Photography of the Last Two Decades," op. cit., p. 110 – 111 and entry "Dieter Hacker" at http://www.personal-views.com/friends/dieter-hacker/, accessed on June 27, 2018.

129 Inka Graeve (ed.), *Mechanismus und Ausdruck. Die Sammlung Ann und Jürgen Wilde: Fotografien aus dem 20. Jahrhundert*, exhibition catalogue (Sprengel Museum Hannover, 1999, Kunstmuseum Bonn, 2000), Munich, Sprengel Museum Hannover and Schirmer/Mosel, 1999.

The emergence of what *European Photography* called "New German photography" in 1981 already,[130] in the timespan between Honnef's *In Deutschland* (1979) and *Klasse Bernhard Becher* (1989), constitutes an important phenomenon in the understanding of the connection between the German documentary paradigm and Düsseldorf photography. The title of the special issue of the American journal *Aperture* published in the spring 1991, "Between Past and Future: New German Photography,"[131] highlights the consolidation of a certain type of photography hinted at in the 1981 issue of *European Photography*,[132] through its reception in the United States.[133] In an article published in that issue,[134] the German art and photography historian Enno Kaufhold lays out the peculiarities of Bernd and Hilla Bechers' students in regard to their teachers, addressing – without naming – the concept of the Düsseldorf School. The author stresses two important aspects relevant to our research. The first is related to the economic circumstances, in which independent photographic practices emerged: "After the integration of photography into the international art market during the 1970s and especially the 1980s, the Bechers' disciples managed to establish themselves in the art world very quickly."[135] The second comments on the status of photographic depiction and its relation with art: "[T]here has [...] been a change of paradigm in their work, from pure photography to a self-conscious form of work which, sloughing off the rules of traditional photography, aims unmistakably at achieving the status of art."[136] What Kaufhold describes is the radically new situation that the Becher students emerged from throughout the 1980s. Barbara Engelbach, in a recent exhibition project on German documentary photography around 1979[137] at the Museum Ludwig in Cologne, pragmatically analyses the shift that occurred in photographic practices at that time: "The emphasis on an authorial figure [...]

130 See *European Photography 5*, issue "New German Photography," Vol. 2, No. 1, 1981 and Gisela Parak, "Schöne neue BRD? Autorenfotografie der 1980er Jahre," in Gisela Parak (ed.), *Schöne neue BRD? Autorenfotografie der 1980er Jahre*, exhibition catalogue, Braunschweig Museum für Photographie, 2014. The Photographer's Gallery in London curated a show in 1981 also bearing the title "New German Photography," showing the works of Thomas Anschutz, Heiner Blum, Verena von Gagern, Andre Gelpke, Ulrich Gorlich, Arno Jansen, Erika Kiffl, Andreas Müller-Pohle, Gabriele and Helmut Nothhelfer, Heinrich Reibesehl, Wilhelm Schürmann and Hermann Stamm. See *Exhibitions at The Photographer's Gallery 1971–Present* [2017]. Available at https://thephotographersgallery.org.uk/sites/default/files/1971 – 2017_TPGExhList.pdf, accessed on June 27, 2018.

131 *Aperture*, issue "Between Past and Future. New German Photography," No. 123, Spring 1991. Introduction written by Klaus Honnef.

132 The journal was founded in 1980 by German photographer Andreas Müller-Pohle.

133 *Aperture* was founded in 1952 by photographers and critics (Minor White, Dorothea Lange, Barbara Morgan, Ansel Adams, Nancy and Beaumont Newhall, Ernest Louie, Melton Ferris and Dody Warren) and constitutes a major vector of diffusion of photography in the United States. What later became a foundation also edited several iconic catalogues such as Robert Frank's *The Americans* prefaced by Jack Kerouac (1968) or *Diane Arbus. An Aperture Monograph* (1972), created in collaboration with John Szarkowski. See for example aperture.org/about, accessed on September 8, 2014.

134 Enno Kaufhold, "The Mask of Opticality," *Aperture*, No. 123 (Between Past and Future. New German Photography), Spring 1991.

135 Ibid., p. 64.

136 Ibid., p. 60 and 64.

137 "Unbeugsam und ungebändigt. Dokumentarische Fotografie um 1979 / Intractable and Untamed. Documentary Photography from 1979," Museum Ludwig, Cologne, June 28-October 5, 2014.

had to push documentary photography outside its legitimizing discursive spaces – such as geology, ethnography or architecture – and into an aesthetic realm."[138] Engelbach bases her analysis on the 1982 text of Rosalind Krauss, "Photography's Discursive Spaces: Landscape/View,"[139] stressing the role and implications of the authorial model – also promoted by Klaus Honnef. The group of Düsseldorf photographers, many of whom initially advocated "photographs without any personal signature,"[140] all emerged in a field where the signature defined their practice as art, a paradoxical stance that has evolved diversely in their respective work and in the discourse on their photography over time. The model Klaus Honnef had advocated throughout the 1970s is retrospectively analyzed as the chief parameter through which photography acquired an artistic status in the 1980s.

While German photography is often associated with documentary forms, highlighting the filiation from Sander to the Bechers and their students, the concept of "New German Photography" entails a broader definition, which even Honnef himself has increasingly endorsed. In the introduction of the *Aperture* issue titled "Between Past and Future: New German photography,"[141] Honnef still stresses the importance of the documentary tradition. In an article titled "Reclaiming a Legacy: Photography in Germany and German History," for instance, Honnef mentions Walker Evans' review of three famous German photo books in the magazine *Hound and Horn* in 1931, in an effort to legitimate German photography through important American figures: Renger-Patzsch's *Die Welt ist schön*, Franz Roh and Jan Tischhold's *foto-auge* and Sander's *Antlitz der Zeit; sechzig Aufnahmen deutscher Menschen des 20. Jahrhunderts*.[142] But in his text, Honnef extends his understanding of author photography to subjective photography – he also uses the term "vanguard" –, which he tended to disregard in the 1970s, primarily focusing on "traditional" deadpan documentary forms. The work of László Moholy-Nagy, Otto Steinert, UMBO and Sigmar Polke is discussed alongside Sander and Renger-Patzsch and several important contemporary trends are addressed in connection with academies in which photography was taught – the Düsseldorf School, the Kunsthochschule Kassel (e.g., Floris M. Neusüss) or the Fachhochschule Bielefeld (e.g., Gottfried Jäger) –, to circumscribe "the specific German accent"[143] that had developed in the country. While there seems to have been a focus on the document in the 1970s, as if the legitimation process of photography was predicated upon the medium's ability to depict – *documenta 5* and *6* played an important role in the formalization and diffusion of that conception –, the 1980s can be interpreted as a more heterogeneous

138 Barbara Engelbach, "Unbeugsam und ungebändigt. Dokumentarische Fotografie um 1979," in Barbara Engelnach (ed.), *Um 1979*, Cologne, Snoeck, 2014, p. 8 – 14.

139 Rosalind Krauss, "Photography's Discursive Spaces. Landscape/View," *Art Journal*, Vol. 42, No. 4 (The Crisis in the Discipline), Winter, 1982, p. 311 – 319.

140 Thomas Struth in 1979, quoted in Enno Kaufhold, "The Mask of Opticality," op. cit., p. 64.

141 Klaus Honnef, "Reclaiming a Legacy," *Aperture*, op. cit., p. 2 – 10.

142 Ibid., p. 3 – 4. See also Walker Evans, "The Reappearance of Photography," *Hound and Horn*, No. 5, October/December 1931.

143 Ibid., p. 9.

period, in terms of photographic practice. A multitude of artist-photographers were increasingly acknowledged, and the focus on strictly documentary forms declined. The Museum Folkwang in Essen, one of the first major fine art museums in Germany that dedicated a department to photography (1979), led by Ute Eskildsen, played a major role in that process. Her epochal exhibition *Reste des Authentischen: Deutsche Fotobilder der 80er Jahre*, held in 1986,[144] crystallizes the idea that photographs are mere reflections or "leftovers" of reality[145] and become autonomous artistic objects. As Esther Ruelfs who in 2003 curated an important exhibition of German contemporary photography with Eskildsen at the Museum Folkwang[146] notes: "Unlike in the early 1980s, nobody would think of large format artistic objects as depictions of reality anymore."[147]

The reception of the young Düsseldorf photographers who had their first important solo shows in the 1980s – Thomas Ruff exhibited his large format *Porträts* for the first time in 1986 in Lyon,[148] Candida Höfer had a solo show at Museum Folkwang in 1982[149] and Andreas Gursky in the Museum Haus Lange in Krefeld in 1989 – thus seems rather paradoxical. Although they clearly benefit from the contextual preconditions to be accepted as artists in the 1980s, their historiography in the 1990s, as will be extensively discussed, rather associates them with a documentary tradition – "true photography," as Kaufhold noted. The coherence of the filiation between Düsseldorf and these documentary forms has considerably impacted its historicization, which has led to the exclusion of other photographic practices. The appropriative use of photography for example, common in Hans-Peter Feldmann or Gerhard Richter's work and taken up by Thomas Ruff and Jörg Sasse, has been largely discarded from that early discourse on documentary; similarly, the use of digital technologies or proto-digital works, such as Gottfried Jäger's *generative Fotografie*, have been excluded from the discourse on Düsseldorf.

144 The exhibition showed the work of Gosbert Adler, Pidder Auberger, Rudolf Bonvie, Joachim Brohm, Walter Dahn, Dorte Eissfelt, Jean-Francois Guiton, Monika Hasse, Volker Heinze, Astrid Klein, Wilmar Koenig, Dieter Neubert, Thomas Ruff and Michael Schmidt. On the exhibition, which was partially reconstructed at the Museum Folkwang Essen in 2016, see for example Florian Ebner, "Sortir du cadre, ou comment exposer l'histoire d'une 'photographie rebelle' sans la domestiquer ?," *Transbordeur. Photographie, histoire, société*, No. 2 (Photographie et exposition), 2018 and more generally Gisela Parak (ed.), *Fotogeschichte*, No. 137 (Die wilde Vielfalt. Zur deutschen Fotoszene der 1970er und 1980er Jahre), Fall 2015.

145 See Ute Eskildsen, "Die Realitäten der Bilder," in Ute Eskildsen and Esther Ruelfs (ed.), *Zeitgenössische Deutsche Fotografie. Stipendiaten der Alfred Krupp von Bohlen und Halbach-Stiftung*, op. cit., p. 6.

146 *Zeitgenössische Deutsche Fotografie. Stipendiaten der Alfred Krupp von Bohlen und Halbach-Stiftung*. 1982 – 2002, Museum Folkwang, Essen, 2003.

147 Esther Ruelfs, "*Zeitgenössische Deutsche Fotografie. Stipendiaten der Alfred Krupp von Bohlen und Halbach-Stiftung*," in Ute Eskildsen and Esther Ruelfs (ed.), Zeitgenössische Deutsche Fotografie. Stipendiaten der Alfred Krupp von Bohlen und Halbach-Stiftung, op. cit.

148 Galerie Philip Nelson, Villeurbanne, 1986.

149 *Öffentliche Innenräume 1979 – 1982*, Museum Folkwang, Essen, 1982.

In the context of the reconstruction of the "original" truth claim of photography,[150] the arrival of an endangering practice can be interpreted as a threat not only to that claim but also to photography more generally, putting photography's relatively recent recognition as an artistic practice legitimated by institutions and markets at risk. The legitimation discourse of documentary photography in Germany, which ought to be interpreted as the main reason for the theory-meager Düsseldorf School, is confronted in the late 1980s and early 1990s with a massive theoretical effort addressing the impact of digital technologies in photography, most of which examines the possible death of the medium. Although considerably influenced by media theories and not necessarily photography specific, this body of texts engages with the future of photography, which digital retouching technologies and online distribution of images potentially implies. This period thus constitutes a point of convergence, where a mature photographic activity, exemplified by established institutional presence and market, collides with a potentially endangering moment. If a retrospective historical overview shows that photography has not died or radically changed, the source of such vehement claims ought to be evaluated, as should the impact they had on the reception of photography in an artistic context, and, even more so, how they affected German documentary photography, which the preceding decades had unequivocally established as a legitimate art form. The reception and understanding of the position toward Düsseldorf photography in that timespan hence derives from that confrontation. The resilience of the inscription of Düsseldorf photography in the German documentary paradigm, which will be addressed extensively in the third and fourth chapter of this book, not only with regard to its relationship with digital technologies and the hypothetical endangering of its often asserted truth claim but also with regard to the specific discourse in Germany on the digital and its visual manifestation, post-photography. But at this point, the "rupture" induced by the appearance of digital technologies has to be examined, as the recent "German photo renaissance"[151] was already threatened by its demise.

150 "Original" aims to point at the discursive reconstruction of photography's ability to depict truthfully, which has considerably fluctuated throughout its history. If the dogmatic belief in a certain truth is counter-balanced by its deconstruction, the question of objectivity in photo-theoretical discourse in the context of artistic photography ought to be addressed systematically, using, for example, Lorraine Daston and Peter Galison's study of the construction of scientific objectivity as a model. See Lorraine Daston and Peter Galison, *Objectivity*, New York, Zone Books, 2007.

151 In his *Aperture* article Klaus Honnef quotes Evans, who describes the "first" German renaissance in photographic activity between World War I and World War II, focusing particularly on *Film and Photo* (1929). Klaus Honnef, "Reclaiming a Legacy," op. cit., p. 3 – 4.

B
THE END OF PHOTOGRAPHY

Throughout the 1970s and the 1980s, the convergence of various curatorial and editorial projects established photography as an autonomous art form by resorting to a re-actualization of the history of the medium. The German documentary paradigm was built upon the rereading of preceding visual and theoretical models, inscribing author photography into a newly discovered tradition. Klaus Honnef's *documenta 6* contribution explicitly invokes that tradition to circumscribe the preconditions of specifically German documentary forms. But this return to the origins of photography is counterbalanced with a discursive field emerging almost simultaneously, governed by a virtually antithetical position: the (re-)birth of the history of photography and the recognition of its contemporary expressions is opposed by the potential disappearance of the medium: digital technologies seemingly uproot photography's newly gained independence and even proclaim its imminent "death." Although no strict causality can be established between both phenomena, they theoretically collide in the Düsseldorf context, when in the late 1980s and early 1990s Thomas Ruff, Andreas Gursky and Jörg Sasse endorse digital technologies.

The emergence of digital post-production tools in photography in that period has brought forth a complex and heterogeneous discourse that has yet to be investigated in correlation with photography-specific theories and contemporary artistic practices. Apart from traditional art historical approaches, a wide array of theorists from different methodological and cultural backgrounds – mainly media and cultural studies in the Anglo-Saxon field; aesthetics, semiology

and philosophy in the French field; and *Bildtheorie, Bildwissenschaften* and *Medienästhetik* in the German field – have reflected upon the appearance of those technological developments in various ways. Since the study of those developments exceeds the scope of this research, they are approached to understand the context in which Düsseldorf photography, and in particular its use of digital technologies, emerged. Interestingly, there seems to be a differentiated reaction to those technologies. While in the Düsseldorf context, digital technologies were not received as such, an incredibly strong discursive impetus theorized the apparition of digital imaging in a larger context. The amplitude of the theoretical production addressing the appearance of digital technologies in photography is rather puzzling: until the late 1970s, the field of photography theory remains rather scarce, scholars having recourse to a fairly small amount of key texts of Siegfried Kracauer, Walter Benjamin and André Bazin. Digital photography, on the other hand, has induced a substantial theoretical debate.

The response of the wide range of positions reflecting upon those technological changes – as much in their theoretical articulation as in their artistic expression – can be schematically broken down into two dominant positions. On one hand there has been a predominantly theoretical discourse, largely Anglo-Saxon but whose ramifications extend to France and to a certain extent Germany, which is based primarily on reinterpretations of semiological readings of photography. The central claim of those theories resides in their categorical proclamation of a "post-photographic" era, synonymous with the end of photography as it was conceived previously – a break chiefly enacted by the supposed loss of the indexical relationship between depictured object and photograph. The second category rallies more pragmatic approaches (e.g., historical, cultural studies, etc.), which did not focus on the alleged ontology of photography, but rather emphasized the uses of the "digital" image, independent from their technological preconditions.

The recent historiography of the concept shows to which extent the object "digital photography" itself seems to escape comprehension or categorization. The variety of discourses, differing in the definition of the object, in the theoretical field they are inscribed in, the methodological orientation they are connected to and the epistemological project they can be related with seems only to show, as some have stated, that "digital photography does not exist."[152] Considering the importance of the phenomenon in the 1990s, it seems nevertheless necessary to survey the main positions and theoretical endeavors attempting to define this object, to establish which methodological orientations those theories embody, and to try to outline geographical particularities. To understand the lack of reaction toward the use of digital technologies in Düsseldorf photography, it is necessary to understand those theoretical interrogations and the core ideas or approaches

152 Lev Manovich, "The Paradoxes of Digital Photography," in Hulbertus von Amelunxen, Stefan Iglhaut, Florian Rötzer, Alexis Kassel and Nikolaus G. Schneider (ed.), *Photography after Photography. Memory and Representation in the Digital Age*, Basel, G&B Arts International, 1996, p. 58.

they rely on. The fact that history, as a discipline, has not reflected upon a contemporary phenomenon that even in 2014 is only twenty to twenty-five years old seems quite logical. But the fact that some theoretical approaches have reflected upon these developments, while others totally disregarded the "digital revolution" or re-interpreted its consequences, even stating that there is no specifically digital photography, remains more difficult to explain.

As of today, several projects surveying the discourse addressing the "post-photographic" condition of photography have already been undertaken. Theoretical histories of photography[153] or recent editions of introductive literature[154] have dealt with the appearance of those technologies, categorizing and systematizing their theorization. But it also seems necessary to explore how various sets of discourse have impacted the reception of particular images. Why were some photographs acknowledged as digital, while others weren't? The evaluation of this history of theories shows the complexity of the object "digital photography," whose full understanding would require another step: it would be necessary to confront this incredibly complex theoretical corpus with a larger contextual field, defined by the produced images, their relationship to the theoretical production and reception and by a spectator adapting to a new visual culture. There emerges a paradox and methodological knot, which is tied to the approach of the digital. Since the theoretical debate is *fundamentally* dissociated from practice – as will become apparent, there is hardly any reading of images using those theories, except maybe to pinpoint the idea of digital manipulation – the understanding of artistic practices reflecting or enacting digital technologies becomes problematic. Considering the spread and amplitude of this theoretical discourse, it seems unconceivable to consider a body of artists – in our case Düsseldorf photography – without tying them to the latter.

One particular study, now paradigmatic in the German field, is exemplary of this phenomenon. The editorial project supervised by Herta Wolf, *Paradigma Fotografie. Fotokritik am Ende des Fotografischen Zeitalters*[155] and *Diskurse Fotografie. Fotokritik am Ende des Fotografischen Zeitalters*[156] offers a broad view of the interrogations that appeared concomitantly with digital technologies. It offers a great variety of approaches, linked to various geographical and cultural areas, and covers a broad range of methodologies and discipline-specific fields. While the constellation of articles represents most of the major protagonists of the "post-photographic" discourse, it also reflects the intricacy of the manifold, sometimes considerably differing methodologies. The particularity of those approaches though, is that they mostly remain on a theoretical level, without engaging with actual images, artistic or other. Mostly, they study

153 Bernd Stiegler, *Theoriegeschichte der Photographie*, op. cit.

154 Martin Lister, "Photography in the Age of Electronic Imaging," in Liz Wells (ed.), *Photography. A Critical Introduction*, New York and London, Routledge, 2004 (1996).

155 Herta Wolf (ed.), *Paradigma Fotografie. Fotokritik am Ende des Fotografischen Zeitalters*, op. cit.

156 Herta Wolf (ed.), *Diskurse der Fotografie. Fotokritik am Ende des Fotografischen Zeitalters*, Frankfurt am Main, Suhrkamp, 2003.

photography as a theoretical entity, eluding the relationship to a material, contextual and visual object. *Paradigma* and *Diskurse der Fotografie*, as its title explicitly states, covers a strictly theoretical and discursive ground, making clear the complexity of photography-related studies addressing the digital, and also reflecting the fundamental geographical differences in visual studies and the transformations in their conception in the last decades of the twentieth century.[157] Our aim isn't, of course, to condemn a theoretical survey for its theoretical mindset. Rather, it is to pinpoint the fact that the discourse on the digital, similar to other photography-specific discourses – the short historical retrospect may arguably play an important role in this situation – is extremely dissociated from artistic practices.

But while the use of digital technologies in Düsseldorf is hardly discussed, there is a concrete artistic imagery associated with the theoretical discourse on the digital: "post-photography." Traditionally epitomizing digital aesthetics, those images are often discussed as the hypothetical outcome of the "digital revolution" and the formalization of those theoretical developments, even though they are often not, in fact, technically digital. But most of the time they are acknowledged by critics or curators only, and they are read as being the output of the digital revolution, while being dismissed by the theoretical corpus. The study of relevant theories, with a particular emphasis on a central work in the discourse on the digital – William J. Mitchell's *The Reconfigured Eye. Visual Truth in the Post-Photographic Era* (1992)[158] – ought thus to be correlated with that post-photographic body of work, to evaluate the critical reception of these "digital" images.

1 MEDIA THEORIES AND PHOTOGRAPHY THEORIES

In an early stage of the theoretical debate on the appearance of digital technologies, until the early 1990s, photography was often used as a "starting point or example" for the establishment of a much wider project of media theory. Those projects were often carried out an "analysis, diagnosis or prognosis" of societal developments,[159] usually looking far beyond the implications photography itself might engender or express. In one of the first exhaustive studies of the history of photography theory including the impact of digital technologies, Bernd Stiegler suggests a generic classification of those early debates to label this stage, "photography and media-theories,"[160] reflecting the convergence of two rather dissimilar objects. Through the analysis of key

157 Embodied by scholars such as Michel Foucault (discourse analysis), William J. T. Mitchell (visual turn) or Gottfried Boehm (iconic turn).

158 William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, Cambridge (MA), MIT Press, 2001 (1992).

159 Bernd Stiegler, *Theoriegeschichte der Photographie*, op. cit., p. 391. For an exhaustive account of those developments, see chapter 8 "Photographie und Medientheorie. Zur Theorie der Photographie bei Vilém Flusser, Jean Baudrillard, Paul Virilio und Norbert Bolz."

160 Ibid., p. 8.

scholars – along with Vilém Flusser, he mentions Jean Baudrillard, Paul Virilio and Norbert Bolz – Stiegler emphasizes the importance of photography in the constitution of a general media theory project. Photography, as a representational system, existed before the advent of digital technologies and the fact that it was an image – a well-known concept theorized for centuries – permitted the apprehension of new media, a rather abstract object, through something familiar in form and use. Networks, computing mechanisms or interactive designs were something rather unsound, which the study of photography would give access to. But Stiegler also points out that in a simultaneous, "hyperbolic"[161] movement, photographic theory would borrow from media history and theory to constitute a more autonomous, medium-related, discourse.

While photography definitely acquired an important role in the early theoretical developments addressing the impact of new media on culture or society – Flusser equals the importance of the invention of photography to the invention of writing[162] – those early observations are seldom reflected upon in later photography-specific theories, despite their spreading and wide reception in media studies. But interestingly, while photography as an artistic image (as opposed to photography as a mass-medial expression) has not become central to media studies, photography as media has not been absorbed by photography-specific theories. Flusser, for example, is hardly mentioned in latter photo-theoretical discourse, his contribution being commonly absorbed by a general media theory. Despite writing one of the first books on photography and digital technologies, his legacy has been largely disregarded by photo theorists, even more so outside Germany.[163] A repeatedly quoted interview between Thomas Ruff and Philip Pocock in the *Journal of Contemporary Arts* (1993), in which the photographer mentions the cross-over categorization of photography established by Flusser, whose name the interviewer does not know, is symptomatic of this tendency.[164]

An important publication, which already suggested a synoptic view of media theories is Florian Rötzer's *Digitaler Schein. Ästhetik der elektronischen Medien*.[165] Published by the theory-oriented Suhrkamp Verlag in 1991, which plays a key role in the history of ideas in the German field in general and the history of photography theory in particular – it edits or translates key works of Adorno, Kracauer, Barthes, Benjamin, Bourdieu and Brecht –, Rötzer's reader compiles important texts of the main theorists addressing digital media, such as Jean Baudrillard, Vilém Flusser, Peter Weibel, Frank Popper, Fred Forest, Paul Virilio and Jochen Gerz. While approaching new media

161 Ibid., p. 390.

162 Vilém Flusser, *Für eine Philosophie der Fotografie*, Göttingen, 1983, p. 16, quoted by Stiegler, op. cit., p. 395.

163 Flusser's *Philosophie der Fotografie* (1983) has been translated into Portuguese in 1986, into French in 1996 and into English in 2000.

164 Philip Pocock, "Thomas Ruff (Interview)," *Journal of Contemporary Arts*, Vol. 6, Summer 1993, p. 78 – 86.

165 Florian Rötzer (ed.), *Digitaler Schein. Ästhetik der elektronischen Medien*, Frankfurt am Main, Suhrkamp, 1991.

from a multitude of angles – networks, techno-aesthetics, virtual spaces, immateriality and data circulation – those contributions clearly reflect the quantitatively immense production of media theories deriving (chronologically more than thematically) from Marshall McLuhan's early thoughts on new technologies, epitomized by his famous book *Understanding Media*.[166] Originating from numerous scientific fields such as philosophy, sociology, anthropology or aesthetics, most of the essays of *Digitaler Schein* enact the unclear differentiation between artistic and non-artistic images, which seems to be a direct consequence of an interrogation of the place of art in society. That indistinctness further derives – as stated by Rötzer in the introduction – from the interaction of a generalized euphoria provoked by new media and the social changes it might imply, and the art field which seems necessarily defined by – in opposition or in continuity with –, those fundamental changes. Nevertheless, despite a certain indeterminacy, the editorial project explicitly aims to define the impact of new technologies on artistic practices, with a particular concern for the "aesthetic and artistic implication of perceptual conditions" [Wahrnehmungsverhältnisse].[167] The hetereogeneity of the editorial project thus reflect, as Rötzer himself states, the "splintered aspects of the techno-imagination."[168] In a retrospective reflection upon the early 1990s and the fascination of the potentialities of virtuality – which has considerably shaped the theorization of digital photography – Lev Manovich retrospectively notes that many of those utopias did not come true and that the imagined "virtual spaces" had actually become augmented realities[169] in which digital technologies serve physical spaces. This idea of the collusion of two entities – reality and its visual augmentation – stands at the core of the reconfiguration of photographic representation by the Düsseldorf photographers explored in this research, although realities are shifted more than they are augmented: a reconfiguration ironically foreseen by William J. Mitchell[170] in *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*,[171] despite his more commonly taken-up claim of the "end" of photography.

166 Marshall McLuhan, *Understanding Media. The Extensions of Man*, New York, McGraw-Hill, 1964.
167 Florian Rötzer (ed.), *Digitaler Schein. Ästhetik der elektronischen Medien*, op. cit., p. 16 – 17.
168 Ibid.
169 Lev Manovich, "Pour une poétique de l'espace augmenté," *Parachute*, No. 113, Jan./Feb./March 2004.
170 At this point it seems necessary to draw attention to the very equivocal names of two key image theorists repeatedly mentioned in this research: William J. Mitchell, author of *The Reconfigured Eye. Visual Truth in the Post-Photographic Era* (1992) and William J. T. Mitchell, author of the concept of pictorial turn (William J. T. Mitchell, "The Pictorial Turn," *Artforum*, No. 30, March 1992) the same year.
171 William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op. cit.

2 "THE RECONFIGURED EYE. VISUAL TRUTH IN THE POST-PHOTOGRAPHIC ERA" (1992)

A multitude of scholars have reflected upon the appearance of digital technologies in photography.[172] However, one book is systematically quoted in the histories and theoretical efforts of what became to be known as "digital photography." William J. Mitchell's *The Reconfigured Eye. Visual Truth in the Post-Photographic Era* (1992) has not only become the programmatic essay delineating the characteristics and implications of new media and photography but is also often attributed the paternity – etymologically and conceptually – of a theoretical movement that could be tagged "post-photography," a terminology often rejected today because of the obsolescence of its correlated ideas. The term "post-photographic" was used for the first time by David Thomas in his article "From the Photograph to Postphotographic Practice. Toward the Postoptical Ecology of the Eye" in 1988.[173] It is commonly Paul Wombell though, who uses the term in the catalogue of an exhibition at the Photographers' Gallery in London in an early curatorial attempt to address "digital photography," which is repeatedly mentioned as the first to use the term.[174] But William J. Mitchell, published by the influential MIT Press in Boston, has indubitably contributed to its widespread adoption. His paradigmatic book published in 1992 and the idea of rupture it advocates – of photography *after* photography –, was at the time widely taken up directly or indirectly by numerous scholars and is still advocated by some.[175]

Throughout the 1990s particularly, his book is (almost) systematically mentioned in every project, curatorial or theoretical, addressing the digital in photography, benefitting from a momentum only few photography theory books have. The wide reception of his main text[176] makes his case historiographically and epistemologically interesting, despite its apparent obsolescence. "Post-photographic" theories are largely regarded today as a reaction to a new technology, and the phenomenon can thus be connected with similar mechanisms of redefinition in the history of representation, in the arts or science, which herald the disappearance of an anterior medium. The appearance of photographic imagery in the mid-nineteenth century has been interpreted as

172 See for example William J. T. Mitchell, "Realismus im digitalen Bild," in Hans Belting (ed.), *Bilderfragen. Die Bildwissenschaft im Aufbruch*, Munich, Wilhelm Fink Verlag, 2007.

173 David Thomas, "From the Photograph to Postphotographic Practice. Toward Postoptical Ecology of the Eye," *Substance*, No. 55, 1988. Earlier examples of texts discussing the loss of photography's function as trace or imprint can be found, although without the mention of the term post-photography. See for example Steward Brand, Kevin Kelly and Jay Kinney, "Digital Retouching. The End of Photography as Evidence of Anything," in *Whole Earth Review*, July 1985. Quoted by François Brunet, "Plus ça change, plus c'est la même chose?," on blog.fotomuseum.ch, January 14, 2014. Available at http://blog.fotomuseum.ch/2014/01/1-plus-ca-change-plus-cest-la-meme-chose/#more-1758, accessed on June 27, 2018.

174 Paul Wombell (ed.), *PhotoVideo. Photography in the Age of the Computer*, London, Rivers Oram Press, 1991.

175 Lately André Rouillé, *La photographie. Entre document et art contemporain*, Paris, Gallimard (coll. Folio essais), 2005 or Jonathan Lipkin, *Photography Reborn. Image Making in the Digital Era*, New York, Harry N. Abrams, 2005.

176 After *The Reconfigured Eye*, Mitchell has predominantly published on the impact of new media on architecture and urbanism, addressing more specialized research fields.

the end of painting in general, the growing artistic photographic practices in early twentieth century as the end of painting in the arts, the generalization of television and video in the 1960s as the end of cinema, the inscription of photography in the institutional and economical entities of the art field in the 1960s and 1970s is yet again depicted as the death of painting, and so forth. Clearly, there has been an equivalent phenomenon in the perception of digital photography, which led to the idea that digital technologies induced a new medium and system of representation and that photography was accordingly endangered. While he evokes – incidentally indeed –, hypothetical cultural consequences of such technological developments and cautiously suggests an epistemological reading of technological change,[177] the argumentation of many of his followers, and for that matter the prevalent perception of his study, is predominantly based on technological determinism[178] deriving from an ontological conception of photography. Notwithstanding its validity or relevance today, it has to be emphasized how that biased reading of *The Reconfigured Eye*, omnipresent in the theoretical discourse, exhibitions and editorial projects addressing those technological changes, became epitomic of the discourse on the digital. The status of Mitchell's book in the history of discourse addressing the digital, thus calls for a (re)assessment.

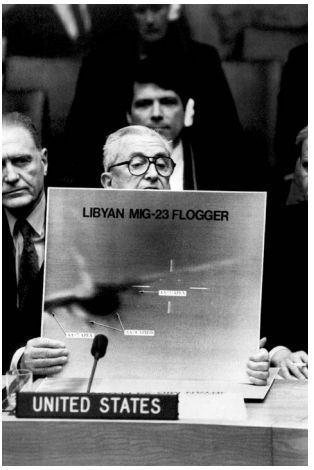

Fig. 21: Photograph of armed Libyan plane shot down by US military in 1989 used as evidence, *The Reconfigured Eye*, p. 22

One of the central assertions that Mitchell's argumentation revolves around is made explicit already in the introduction of his essay; it schematically states that photography has undergone a radical shift. The recent technological developments have allegedly challenged photography as a technical apparatus and as a system of representation.

177 William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op. cit., p. 19 – 20.

178 Martin Lister, "Photography in the Age of Electronic Imaging," in Liz Wells (ed.), *Photography. A Critical Introduction*, New York, Routledge, 1997, p. 315.

Mitchell argues that photography is "dead – or more precisely, radically and permanently displaced."[179] His affirmation stems from the certitude that the "digital revolution" has fundamentally changed the medium in its ability to represent, inducing new artistic and vernacular practices and requiring new methodological tools to be apprehended. Numerous pragmatic aspects are dealt with in his study, such as technical issues, contextual questions, historical examples of truth claims or manipulation in photography (see Fig. 21), or the epistemological relevancy of his hypothesis, but it is mainly the idea of rupture due to an ontological displacement – much more than to the actual concrete uses he addresses – that will be hung onto by his followers. While the concrete elements will be explored subsequently to show how they contrast with the ontology drawn from *The Reconfigured Eye*, it is the purely theoretical articulations that shall be addressed henceforth.

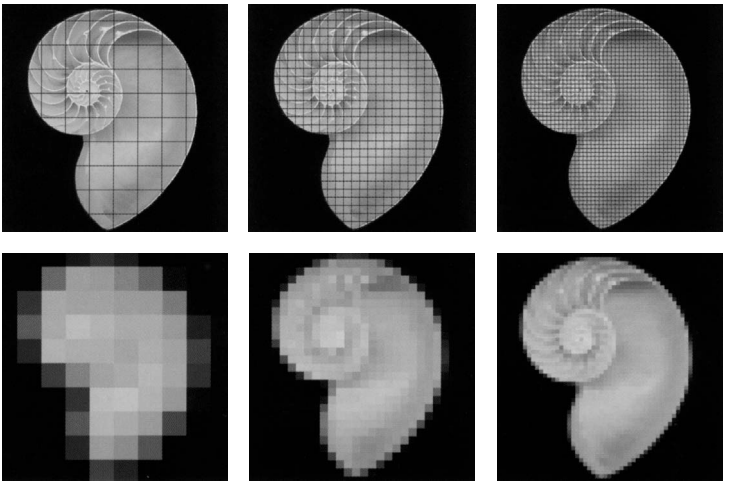

Fig. 22: Examples of "sampling and quantization" of an image, *The Reconfigured Eye*, p. 61

Picture resolution

As most of the theories professing the end of photography, post-photographic theories come into being in the trail of semiotic and post-structural thought. Rather than addressing actual images, artistic practices or discourse in their social, cultural and institutional context, it is the sole *idea* of digital photography that is analyzed. The digital image is thus apprehended through the characteristics it supposedly bears as a medium, establishing the ontology of the so-called post-photographic image. The main feature, among some others, coopted to support the claim of disruption resides primarily in the relationship between the image and the represented: according to Mitchell, digital capturing and retouching devices have fundamentally displaced photography, because the link between image and "reality"

179 William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op. cit., p. 20.

has been forfeited. The ability to capture reality, because it relies on strict indexicality, seems to be exclusively possible with film photography. Digital imagery on the other hand, due to technical limitations, is reduced to an "artifice." To demonstrate his claim, Mitchell mobilizes several supposed characteristics of the medium, which the digital nature of the pictures has allegedly changed.

While an analogue photograph has "a continuous spatial and tonal resolution" and an "indefinite amount of information," a digital image contains a "fixed amount of information" and "limited spatial and tonal resolution"[180] (see Fig. 22). Due to extremely low resolutions in the early 1990s, this assertion might have been correct at the time. One of the first recorded digital cameras built in 1975 by Kodak had a resolution of 0.01 megapixels (i.e., 10'000 pixels); in the mid-1990s Kodak or Apple mainstream cameras offered resolutions in the range around 0.3 megapixels (i.e. 300'000 pixels) and a very expensive professional system such as the Kodak DCS approached 6 megapixels (i.e., 6'000'000 pixels).[181] Every mainstream camera nowadays achieves around 12 megapixels (12 million pixels), with professional systems reaching 100 to 150 megapixels (100 – 150 million pixels) and images composed of numerous shots, as they have become increasingly available on the Internet, even much more.[182] The theoretical resolution of a 35 millimeter film (24 by 36 millimeter surface) reaches around 9 millions pixels, but a digital image only needs half that amount to be printed with comparable quality,[183] which shows that the relevance of defining an image through its resolution is problematic if addressed on a theoretical level only, even if one disregards the exponential growth of resolutions.

If we were to follow Mitchell's methodology – equating "visual truth" with picture resolution – today's imaging technologies exceed by far the resolution of silver-print standards, which undermines one of the key arguments Mitchell's followers have adopted, at least on a technical level. But while that particular aspect has often been quoted and reflected upon, few commentators have mentioned the fact that Mitchell was very well aware of the implications of such technical limitations, and that the definition of digital imagery was also connected with the way a spectator perceived it, thus introducing a phenomenological or cultural parameter. In a note of the first chapter, he argues that "early digital images [...] were considerably inferior to the best silver-based photographs, and limited its application. But the level of quality obtainable in digital images is primarily a function of available digital storage capacity and processing speed, and they constantly improve, so the digital image will seem increasingly attractive as time

180 Ibid., p. 5 – 6.

181 Todd Gustavsson, *Camera. A History of Photography from Daguerreotype to Digital*, New York/London, Sterling Innovation, 2009, p. 335 – 341.

182 The italian HAL9000 company produced a 16 gigapixel image (e.g., 16 billion pixels) of Leonardo Da Vinci's *Last Supper*, available on the Internet as a Flash interface. All Google Maps images put together constitute a (theoretically) even bigger file.

183 Emmanuel Bigler, "Film contre silicium. Est-ce seulement une question de résolution?" April 2007. Available on http://www.galerie-photo.com/film-contre-silicium-resolution.html, accessed on June 15, 2018.

goes by."[184] But even if Mitchell has foreseen the hyperbolic development of digital imaging technologies and a phenomenon of acculturation to the visual output of digital technologies, the conclusions he draws as to the status of photography suggest why his book is so widely quoted. The function and importance of picture resolution in Mitchell's theory only becomes apparent if it is understood through the role it plays in a wider concept, central in photography theory: the physical relationship to reality.

The "physical" relationship to reality

If one is to compare representativeness of film-based photography and digital imaging on a technical level, one is soon confronted with the claim that there is a physical bond – Mitchell reintroduces the often-quoted term acheiropoetic[185] to define its modalities – between the depicted reality and the image. The chosen terminology, which emanates from the theological field, originates from the characterization of the imprint of Christ's body on the veil, which supposedly covered his corpse, thus suggesting a magical or mystical relationship between image and reality. Such a relationship, in its common interpretation by photography theory, not only implies the "truthfulness" of the image, but also allegedly guarantees a total absence of agency by the photographer. "We can point out that there is no human intervention in the process of creating the bond between photograph and reality,"[186] he emphatically argues. The fact that this supposedly privileged contact has been undermined by digital technologies was extensively reflected upon in the early 1990s, Mitchell being one of the first to formulate that claim. Its main argument derives from a technical reading of digital imaging technologies in which the physical bond between the image and the represented reality is lost. While the light is physically imprinted on a silver-based photograph, it is captured by a sensor and electronically processed in a digital image. As such, digital imageries would not be photographic anymore, because that physical bond is purportedly broken. While many have "lamented" the end of photography[187] and the belief in its ability to represent reality, it seems today patent that this "function" is based on ideological and not technical mechanisms[188] and that the belief in digital photographic imagery endures. But in the early discourse on digital photography, there have

184 Footnote 36 in William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op. cit., p. 231. There is no mention that the 2001 edition (fourth printing) we are using has been revised, and it can thus be assumed that the footnote is present in the original 1992 edition already.

185 Ibid., p. 28.

186 Ibid.

187 For a short summary of those historiographical developments, see for example Corey Dzenko, "Analog to Digital. The Indexical Function of Photographic Images," *Afterimage*, Vol. 37, No. 2, September/October 2009.

188 See for example Tom Gunning, "What's the Point of an Index? Or Faking Photographs," *Nordicom Review*, Vol. 5, No. 1/2, September 2004 or Damian Sutton, "Real Photography," in Damian Sutton, Susan Brind and Ray McKenzie (ed.), *The State of the Real. Aesthetics in the Digital Age*, London, I.B. Tauris, 2007, p. 165, mentioned in Corey Dzenko, "Analog to Digital. The Indexical Function of Photographic Images," op. cit., p. 21.

been numerous discussions about the supposed loss of that privileged physical link. On a strictly technical level, the imprint of light in film-based photography and digital photography obviously differs considerably, as will be discussed hereafter. But those differences have clearly been overstated, for several reasons.

First of all, the visual differences and their implications in terms of representativeness and perception have to be mentioned. In 1990, a digital image contained a rather poor amount of data, which obviously contributed to the idea that photography was now endangered and that we had to cope with a "worse" medium in terms of representativeness. Then, there is the fact that the viewer wasn't acquainted with the formal differences between analogue and digital and logically perceived the new visual output suspiciously, which is not the case anymore, at least not to the same degree. The belief in the depictured reality in a digital photograph, printed in a newspaper or displayed on a smartphone screen, has not been impaired. On the contrary, it is often the digital nature of images that today allows corroboration of their origin. The often discussed images of torture in the prison of Abu Ghraib in Iraq,[189] whose surprisingly low quality and strong pixilation indicate their digital source, have not been perceived as authentic *despite* their nature, but partly *because* of it. The fact that they had been compressed to circulate on the Internet improved their credibleness, instead of degrading it. But in the early 1990s, digital images were new and were not inscribed in a history which attested to a certain extent to their veracity. Film-based photography on the other hand had been given a "truth value" through specific practices such as scientific representation, photo-reportage or documentary images throughout the twentieth century.[190]

Another feature that stems the rupture claim – symptomatic of a certain ontology-based theorization of photography – is the very fact that photography has often been addressed on that level solely, with scholars trying to define it through its ontological status. Resulting from a structuralist reading, defining *photography* as a theoretical object, those approaches (Barthes,[191] Bazin,[192] etc.) reject the analysis of actual images with a context, materiality or history, suggesting a definition of the medium in which the physical bond between image and represented reality occupies a central role. While this bond constitutes a fundamentally given parameter in film-based photography – it basically derives from Peircian semiology and has remained prevalent in photography theories ever since – it seemed suddenly endangered by digital imagery, which allegedly undermines it. In Mitchell's analysis of that connection, the ontological approach derives from a primarily

189 For a full history of their diffusion, see for example André Gunthert, "L'image numérique s'en va-t'en guerre. Les photographies d'Abu Ghraib," *Etudes photographiques*, No. 15, November 2004.

190 For an account of the construction of scientific objectivity in photography, see Lorraine Daston and Peter Galison, *Objectivity*, op. cit.

191 See Roland Barthes, "Le message photographique," in *Œuvres complètes*, Seuil, Paris, 1993 (first published in *Communications*, No. 1, 1961), p. 938 – 949 and more prominently in Roland Barthes, *La Chambre claire, Note sur la photographie*, Paris, Gallimard/Le Seuil, 1980.

192 See André Bazin, "Ontologie de l'image photographique" [1945], in *Qu'est-ce que le cinéma?*, Paris, Ed. du Cerf, 1981, p. 9 – 17.

technical reading of the digital apparatus, which is allegedly unable to represent in the same manner because of its electronic nature. Mitchell even goes as far as inscribing that theoretical approach into a more pragmatic reading, stating that "although a digital image may look just like a photograph when it is published in a newspaper, it actually differs as profoundly from a traditional photograph as does a photograph from a painting."[193] The focusing on the physical bond itself thus shows to which extent the contemporary response to the appearance of digital technologies is subordinated to a philosophical doctrine, which is rather surprising if we consider the fact that Mitchell's book discusses numerous technical aspects of digital images, addressing the various retouching tools that digital post-production allows, discussing digital brushstrokes, computer collages or algorithmic image constructions, and that he actually analyses many scientific, vernacular or artistic images in detail. It is surprising also to which extent the well-handled historicization and contextualization and the pertinent examination of numerous examples loses relevance because of the overall inscription of his endeavors in photography-theory specific idiosyncrasies. Retrospectively, it has to be argued that *The Reconfigured Eye* contains extremely valuable reflections on the appearance of digital technologies in photography, but they have been considerably neglected. Mitchell's reception predominantly consists of an endorsement or reinterpretation of the idea of rupture between photography and its post-medial condition.

A fourth element which today explains that unabated endorsement is the position toward a "new" phenomenon whose technical and social evolution had not been foreseen. A comparison of those technical developments with an interestingly similar antecedent evolution – we assume the fact that it is not fully comparable, but that it is exemplary of the methodological standpoint of those early theories – shows how the idea of rupture itself is problematic. If we consider a wider media archaeology of the digital image, which takes into account its structural mechanisms and not only its "physical" condition, we could argue that any mechanical reproduction of photographic material using raster grids (e.g., offset prints, serigraphy, half-tone process or rotogravure)[194] can be seen as a primitive form of digitalization,[195] with a limited amount of data (or at least a much smaller amount than the original picture). A key point to the understanding of the digital in Düsseldorf photography – as will be argued in section four – resides in the connection between the grid structures, which emerged in the Bechers' work and in numerous photo-conceptual strategies, and their re-enactment by Thomas Ruff, Andreas Gursky and Jörg Sasse. Some recent histories of mechanical images have, for instance, proposed categorizations based on processes rather than

193 William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op. cit., p. 3

194 See for example Anne-Cartier Bresson (ed.), *Le vocabulaire technique de la photographie*, Paris, Marval/Paris Musées, 2008, chapter 6.

195 Susanne Holschbach, in "Foto/Byte. Kontinuitäten und Differenzen zwischen fotografischer und postfotografischer Medialität," in *Medien Kunst Netz*, available at http://medienkunstnetz.de/themen/kontinuitaeten_differenzen/, accessed on June 25, 2018.

technology. *The Printed Picture* exhibition of The Museum of Modern Art (2008), for example, exhibits images made with "traditional" printing technologies (etching, woodcuts, lithographs, etc.), with photographic processes (daguerreotypes, tintypes, non-silver processes, gelatin silver processes, etc.) and digital photographic processes (inkjet, dye sublimation, digital c-prints, etc.), thus blurring the distinction between printing and photo-development.[196] Another example can be found in the exhibition *Neue Realitäten. FotoGrafik von Warhol bis Havekost* of the Kupferstichkabinett of the Staatliche Museen zu Berlin (2011), which has a similar curatorial stance, although all photographic sources are in this case printed through mechanical processes and not using light-sensitive paper. The title of the exhibition even highlights the relationship of photography and graphic arts with a wordplay combining the terms *Foto* and *Grafik*, visually disjoined with a typographical trick.[197] Logically, these new systems of representation should also have suffered from a similar dismissal, as subdivision in a discrete number of picture elements resembles digital technologies and its derivative pixilation. But mechanically reproduced photographs such as those currently used in newspapers or magazines (offset, etc.) – probably the most current media through which photography is seen – have never been perceived as non-photographic. Commonly, the difference between analogue and digital technologies in photo-specific discourse suffers from a surprising attachment to the idea of indexicality, which the study of other media like film has overcome. The reception of the shift from the analogue moving image to its digital counterpart has been somehow tempered by the existence of video (VHS), an analogue capturing system that functions as an intermediary form between film and digital video. "In the progression from material object to electronic signal to computer media, the first shift is more radical than the second," Lev Manovich argues, considering that digital media are above all, electronic.[198] Not only has the existence of this intermediary state allowed an evasion of the discourse of rupture – there haven't been many theories advocating the end of film, despite attempts to undermine its technical characteristics or economy[199] – but it has also allowed for understanding the structural mechanisms of "new" and "old" media, conceiving a methodological framework that is not, like a great deal of the photographic discourse, based solely on an ontological approach. Based on a strict interpretation of the indexicality between photograph and depicted object, Mitchell's technological determinism exemplifies methodological specificities of the theory and history of

196 See Richard Benson, *The Printed Picture*, exhibition catalogue (Museum of Modern Art, New York, 2008 – 2009), New York, The Museum of Modern Art, 2008.

197 See *Neue Realitäten. FotoGrafik von Warhol bis Havekost*, exhibition catalogue (Kupferstichkabinett of the Staatliche Museen zu Berlin, 2011), Cologne, Wienand, 2011.

198 Lev Manovich, *The Language of New Media*, Cambridge (MA)/London, The MIT Press, 2001, p. 133. Quoted in Slavko Kacunko, *Closed-Circuit Videoinstallationen*, Berlin, Logos, 2004 – 2005, p. 76, who reviews this question in the chapter "Analog und Digital," p. 71 – 76.

199 See for example Claus Gunti, "Post-, para- et champs élargis. Quelques réflexions sur les catégories alternatives à la photographie et au cinéma," *Décadrages. Cinéma, à travers champ*, No. 21 – 22 ("Cinéma élargi"), Winter 2012.

photography, disregarding images to delineate theoretical objects devoid of context, materiality or history. The predominance of such approaches in the photo-theoretical discourse and its convergence with artistic practices seemingly embodying them, has clearly shaped the idea of digital photography, thus also altering the perception of documentary practices in which a transparent depiction is paramount, such as photography from Düsseldorf. The understanding of the reception of digital technologies in Düsseldorf photography thus requires the exploration of a wider epistemological framework interrelated with those technologies even if, as mentioned above, Düsseldorf photography has hardly been connected to the imagery and theoretical discourse of digital photography. If post-photography, in its discourse or artistic expression, cannot be directly linked, the reasons why those contemporary phenomena do not interact directly still need to be investigated.

Manipulability and closure

Besides picture resolution and the apparent loss of connection between image and reality, another feature of digital technologies central in Mitchell's essay has been repeatedly invoked to differentiate both technologies: the potential mutability and manipulability of digital imagery.[200] Mitchell admits that photography has always been retouched, and his study extensively discusses historical examples such as Le Corbusier's retouched architectural photographs[201] illustrating *Vers une architecture*, Alexander Gardner's famous staged *Slain Rebel Sharpshooter*[202] and the well-known picture of Lenin addressing the crowd in which Trotsky had been removed.[203] Those examples are not simply anecdotic in his argumentation. All along *The Reconfigured Eye* Mitchell invokes concrete historical examples to show that retouched photography has always existed. But despite discussing numerous examples throughout his books, he emphasizes the fact that "extensive reworking of photographic images to produce seamless transformations and combinations is technically difficult, time-consuming and outside the mainstream of photographic practice,"[204] while the raster grid system that digital images are based on allows easy retouching. To support his argument, he confronts musical scores and literary texts, which would traditionally have "final, definitive, printed versions"[205] (i.e., traditional photography), with computer files for which there is "no corresponding act of closure,"[206] to claim that digital photography is "open to endless modification."[207] Basically, Mitchell invokes the hypothetical abilities of digital imagery (e.g., unlimited manipulation, etc.), without engaging in a concrete examination

200 William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op. cit., p. 5ff.
201 Ibid., p. 201 – 202.
202 Ibid., p. 42 – 44.
203 Ibid., p. 199 – 200.
204 Ibid., p. 6.
205 Ibid., p. 51.
206 Ibid.
207 Ibid.

of digital images. Digital imagery still was, at the time, rather uncommon and thus outside of everyday or artistic practices. But his rapprochement nevertheless poses a methodological problem, since he compares a theoretical object – he actually addresses the digital image file – to concrete images, and his projective analysis of what the digital image could become counterbalances his historical demonstration on retouching. Mitchell compares an object (a printed score or a film photograph) to an abstract concept (the digital file). For almost any use made of digital photography in the early 1990s, there is an actual physical output that Mitchell dismisses. He envisions the potentialities of digital imagery but disregards their actual use. He envisions digital imagery as "fragments of information that circulate in the high-speed networks now ringing the globe, that can be received, transformed and recombined like DNA to produce new intellectual structures having their own dynamics and value,"[208] while they are in fact strictly images, often printed out or used on standalone computers, Internet connections speeds and image compression algorithms forbidding a convenient and widespread circulation. His position thus reflects primarily an interrogation of the potentialities of digital imagery and of what photography could look like, and a certain fascination with digital technologies, which his scientific background and institutional attachment – he is Professor of Architecture and of Media Arts and Sciences at the Massachusetts Institute of Technology (MIT)[209] – might partially explain.

What is particularly interesting is the fact that his argumentation is surprisingly twofold. On one hand it shows to which extent indexicality and the relationship to the real are concepts deeply rooted in the history of photography theory. Basing an important part of his study upon the idea that there is an indexical link to reality in analogue photography, Mitchell endorses the never-ending and systematically reoccurring claim that photography is imbued with a privileged relation to the real, an idea exhaustively and repeatedly deconstructed since the post-structural effort, which reads photography as a visual language based on signs. But Mitchell also proves extremely perspicacious methodologically, wondering how the change he describes could be understood epistemologically, evaluating the nature of such change. Questioning theories addressing the birth of photography and epistemological re-readings of their implications, Mitchell invokes Jonathan Crary's recently published *Techniques of the Observer. On Vision and Modernity in the Nineteenth Century* (1990)[210] and suggests that "sometimes it is argued (usually by radical historians or theorists) that technical innovation results from irresistible social pressure."[211] "Symmetrically," he suggests another reading of technological change, arguing that "it can be proposed (typically by commentators of more positivistic and conservative outlook) that technical innovations

208 Ibid, p. 52.
209 Pioneer in the development of computing and networking technologies.
210 Ibid., footnote 37, p. 20.
211 Ibid., p. 19.

emerge autonomously and create new social and cultural potentials."[212] He further exemplifies his alternative reading with Erwin Panofsky's analysis of film: "It was not an artistic urge which gave rise to the discovery and gradual perfection of a new technique; it was a technical invention that gave rise to the discovery and the perfection of a new art."[213] It can thus be argued that Mitchell's mention of art historical tendencies aims to understand the history of technologies outside of a strict history of technical apparatuses.[214] But rather than actually confronting the two antagonistic positions of Panofsky and Crary, he reads them both as supporters of a discourse of rupture: "Either way, we can identify certain historical moments at which the sudden crystallization of a technology (such as printing, photography, or computing) provides the nucleus for new forms of social and cultural practice and marks a new era of artistic exploration."[215] Concentrating predominantly on the nineteenth century, Crary originally meant to evaluate the appearance of digital imaging systems much like Mitchell, also evoking a potential rupture. "The formalization and diffusion of computer-generated imagery heralds the ubiquitous implantation of fabricated visual 'spaces' radically different from the mimetic capabilities of film, photography and television,"[216] he argues. But Crary's hypothesis, similar to very recent attempts that try to formalize those technological changes which also advocate a fundamental break,[217] resides on an epistemological level, while Mitchell's, despite a certain awareness of those approaches, resides predominantly on an ontological level.

The paradox in *The Reconfigured Eye* thus resides in the parallel use of antithetical methodologies. The title of the book itself implies a spectatorial alignment on new technologies (the eye is *reconfigured*), thus evaluating epistemological implications of digital imaging systems, and the idea that photography has lost its prevalence as an "authentic" media, through the loss of relationship to the reality of digital media (the post-photographic era). Numerous aspects suggest that Mitchell does not fully believe in the death of photography. The formulation "photography was dead – or more precisely, permanently displaced"[218] clearly shows the ambiguity. The epistemological implications of digital imaging systems and the deceptive potential of photography – analogue or digital – is discussed in the text, yet the discourse often falls into the binary opposition of true versus false. Mitchell argues that "our capacity to evaluate plausibility [of a

212 Ibid., p. 20.

213 Erwin Panofsky, "Style and Medium in the Moving Pictures," in Daniel Talbot (ed.), *Film*, New York, Simon and Schuster, 1959. Quoted in William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op. cit., footnote 38, p. 20.

214 In the mid-1990s, Lev Manovich or Martin Lister drew attention to the flaws of a purely technical reading of digital photography. See Martin Lister, "Photography in the Age of Electronic Imaging," op. cit., p. 333.

215 William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op. cit., p. 20.

216 Jonathan Crary, *Techniques of the Observer. On Vision and Modernity in the Nineteenth Century*, op. cit., p. 1.

217 See for example Bernd Stiegler, "Digitale Fotografie als epistemologischer Bruch und historische Wende," in Britta Neitzel (ed.), *Das Gesicht der Welt. Medien in der digitalen Kultur*, Munich, Wilhelm Fink Verlag, 2004.

218 William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op.cit., p. 37.

photograph] is [...] constructed by our positioning within discourses"[219] and that it depends on an "ideological framework, [...] an existing knowledge structure"[220] and on a credible source and provenance. But he concludes that while analogue images are not necessarily trustworthy, digital images "stand at any point from algorithmic to intentional. [...] The referent has come unstuck."[221] He emphatically concludes that "the emergence of digital imaging has irrevocably subverted these certainties [photographs as a truthful "report" of the world], forcing us to adopt a far more wary and more vigilant interpretative stance."[222]

3 WILLIAM J. MITCHELL'S SELECTIVE ENDORSEMENT

The threatened referentiality brought forth by digital photography has considerably impacted the reception of Mitchell's work. Numerous aspects of his argumentation have been dismissed or disregarded, which has given an impression of homogeneity to his discourse and paradigmatic or programmatic status to his book. A quote from Herta Wolf in the introductory text of one of the major theoretical compounds of the post-photographic debate in Germany – *Paradigma Fotografie* and *Diskurse der Fotografie* – interestingly points at the selective reading of texts in the history of photography in general, and the history of the discourse on the digital in particular:

> *There are key texts that are repeatedly quoted by those concerned with photography and that [...] act as paradigms for the scientific community. It is surprising, however, that these essays about photography predominantly serve as evidence, and that at the end of the twentieth century only few scholars have read those key texts of the history of photography critically.*[223]

In that period of intense theorization, numerous scholars endorsed Mitchell's rhetoric of rupture. To name a few who are commonly quoted in the lineage of Mitchell or explicitly endorse him, one could mention Göran Sonnesson, who literally adapts Peircian semiology to the digital image,[224] Peter Lunenfeld, who evokes the "dubitative" status of digital imagery that challenges the "Primus inter pares of media of representation,"[225] Lev Manovich or Edmond Couchot, who imagine

219 Ibid., p. 20.
220 Ibid.
221 Ibid., p. 31.
222 Ibid., p. 225.
223 Introduction of Herta Wolf (ed.), *Paradigma Fotografie, Fotokritik am Ende des Fotografischen Zeitalters*, Frankfurt am Main, Suhrkamp, 2002, p. 13.
224 Göran Sonesson, "Post-Photography and Beyond. From Mechanical Reproduction to Digital Production," *Visio (International Association for Visual Semiotics)*, No. 4, Vol. 1 ("Postphotography"), p. 11 – 36, n.d.
225 Peter Lunenfeld, "Digital Photography. The Dubitative Image," in Peter Lunenfeld (ed.), *Snap to Grid. A User's Guide to Digital Arts, Media and Cultures*, Cambridge (MA) and London, MIT Press, 2001 or in its German translation in "Digitale Fotografie. Das dubitative Bild," in Herta Wolf (ed.), *Paradigma Fotografie*, op. cit.

constantly moving images, opposing analogue to digital photography because of its (theoretical) lack of materiality. But paradoxically, while there seems to be a common theoretical ground that enables Mitchell's followers to state the idea of rupture, significant differences appear throughout what seems to be a coherent discursive entity.

If an exhaustive reception of Mitchell has yet to be established, a superficial assessment of his impact on those theories already shows to which extent his ideas were only partially dealt with. Selected structuring ideas serve as paradigmatic examples for the explanation of the death of photography, even though they only constitute particular elements in the argumentation of the author. Mitchell's text rather acts as source material or manifesto, rather than being a theoretical model his followers actually discuss or engage in. This phenomenon of the endorsement of Mitchell's ideas can be broken down schematically into two levels of argumentation. On a strictly argumentative level, it appears that related theorists concentrate on a limited number of quotations that are repeatedly mentioned. Not only do they invoke the same arguments, but they also have recourse to the same citations. On a superimposed level, it is the notion of "truth value" and the issue of "primacy"[226] toward other means of representation – in this case the hypothetical supplanting of chemically produced images by digitally produced images – that are most commonly re-used. To exemplify the first level of interaction between Mitchell and subsequent post-photographic theories – the reclamation of argumentative elements expressed through the reuse of particular quotations –, we shall examine one particular example. A single example only offers a partial understanding of that phenomenon and cannot pretend to consistently establish a phenomenon. The repeated quoting of that particular argument nevertheless shows to what extent paradigmatic ideas, rather than actual theoretical developments, have been re-used by Mitchell's endorsers.

One of the key arguments of Mitchell's discourse of rupture is the idea that an analogue photograph possesses a "continuous spatial and tonal variation,"[227] while a digital photograph is based on a raster grid structure (Fig. 23, 24). The implications of such an apparently trivial technical feature are, in Mitchell's as in his followers' argumentation, considerable. The claim that digital images are not "photographic" any longer derives directly from Mitchell's technical differentiation of the digital and the analogue image. The grid pattern structure based on pixels and the processualization that digital photographs are based upon, opposed to the supposedly continuous analogue image, is primarily responsible for the loss of relationship to the real, the "acheiropoetic" contiguity to the represented object, disregarding obvious counterexamples (e.g., offset printing in newspapers). Rather than the argument itself, it is its function that ought to be discussed here in order to understand why that particular aspect is

226 Steven Skopik, "Digital Photography. Truth, Meaning, Aesthetics," *History of Photography*, Vol. 27, No. 3, 2003, p. 264.

227 William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op. cit., p. 4

found repeatedly in Mitchell's historiography. Why has this particular argument been given such an importance? Peter Lunenfeld for example suggests an alternative proposition, one in which the truth claim does not rely on single images, as in Mitchell's book, but on image systems. He suggests that the digital revolution does not lie in the shift from "chemical to digital systems of production"[228] but in the shift from the "discrete photograph to the essentially unbound graphic,"[229] envisioning photography as a multimedia object which only exists digitally, in networks or computers, and in perpetual interaction with other kinds of media (sound, motion graphics, etc.). But despite that relevant analysis, which merges with recent views on that particular question, he nevertheless quotes Mitchell's idea of rupture based on the supposed loss of "continuous spatial and tonal variation" in digital photography.[230]

More than the consequences he draws from the use of that particular argumentative element, it is the fact that Mitchell's legacy is selectively interpreted that is noteworthy in this context. The quote "the continuous spatial and tonal variation of analog pictures is not exactly replicable"[231] is further taken up by Lev Manovich in "The Paradoxes of Digital Photography."[232] While critically approaching Mitchell's text – and conclusively stating that digital images are not less true than analogue images[233] – Manovich discusses realism in both imaging systems. Although he does not endorse Mitchell's position, the context of publication of the article – its title reads "the paradoxes of digital photography" and the exhibition "photography after photography" – contributes to a discourse suggesting hypothetical changes or shifts. While the discourse addressing digital photography is extremely diverse, and this particular text does not necessarily advocate an alleged rupture or shift, the concurrence of various factors – its association with post-photographic imagery or with the idea of such shift – produces a discursive ground that seems to suggest otherwise. As Martin Lister notices, "with the coining of the term 'post-photographic' in the early 1990s, a decisively historical and epochal dimension was given to the thinking about the impact of new image technologies upon photography."[234] The *idea* of the post-photographic thus played a key role in the reception of the digital – and the non-reception of the digital in Düsseldorf – much more than the actual, circumstantial response to specific images or theories. This idea further collided with another important preoccupation of that time, the interrogation of the supposed reconfiguration of the human body in physical space and representation, a collusion which further conditioned the understanding of digital technologies in a broader context.

228 Peter Lunenfeld, "Digital Photography. The Dubitative Image," op. cit., p. 58 – 59.
229 Ibid.
230 Peter Lunenfeld, "Digitale Fotografie. Das dubitative Bild," in Herta Wolf (ed.), *Paradigma Fotografie*, op. cit., p. 163.
231 William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op. cit., p. 6.
232 Lev Manovich, "The paradoxes of digital photography," in Hulbertus von Amelunxen, Stefan Iglhaut, Florian Rötzer, Alexis Kassel and Nikolaus G. Schneider (ed.), *Photography after Photography. Memory and Representation in the Digital Age*, Basel, G&B Arts International, 1996, p. 59.
233 Ibid., p. 65.
234 Martin Lister, "Photography in the Age of Electronic Imaging," in Liz Wells (ed.), *Photography. A Critical Introduction*, op. cit., p. 304. See especially chapter "A Post-Photography Era?," p. 304 – 307.

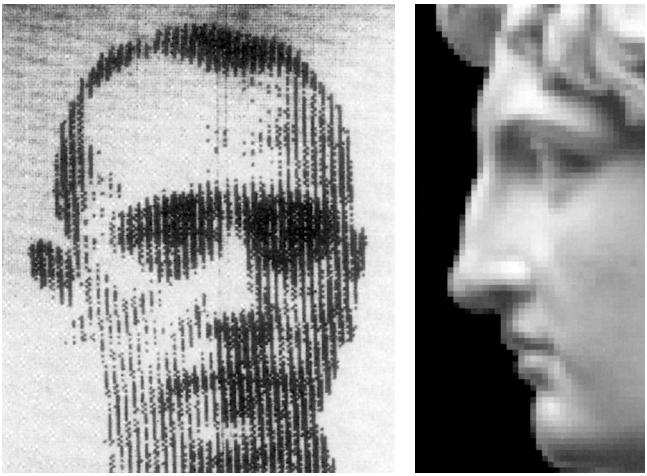

Fig. 23: One of the first digital images made with an NBS mechanical drum scanner used as an example of raster grid in digital images, *The Reconfigured Eye*, p. 4
Fig. 24: Enlargement of a digital image exemplifying the discrete pixels, *The Reconfigured Eye*, p. 5

C DISCOURSE ON DIGITAL PHOTOGRAPHY IN GERMANY

1 POST-PHOTOGRAPHY AND DÜSSELDORF

The understanding of the reception of digital technologies in Germany in the 1990s is impaired by the complexity of its situation – the multitude of strictly theoretical discourses and practices they are associated to – and cannot be approached in a similar manner to the documentary discourse. The latter stems both from the legitimacy of the representation of the real and a history it can be connected to, while digital technologies have from their beginnings been connected with manipulation and non-legitimate artistic forms. The obsolescence of certain post-photographic theories has clearly led many scholars to discard such discourse altogether, also repressing the indirect role they might have played in the constitution of other objects such as documentary photography. Although difficult to establish strictly, it could be argued that the triumph of the Düsseldorf School and more generally of documentary practices can be attributed – at least partially – to the rejection of these theories. It could be argued that the fear regarding the end of photography has triggered a downscaling of possible photographic practices, focusing on the supposed defining character of the medium, the imprint [Abbild]. In terms of methodology, such a hypothesis is difficult to pursue. It is rather delicate to evaluate the fact that throughout the 1990s digital manipulation in the images of Andreas Gursky or Thomas Ruff were not discussed. The non-reception of the digital in their work can only be approached indirectly.

Similar to the way that *In Deutschland* (1979) exemplifies the construction of a discourse on documentary, one particular exhibition crystalizes the heterogeneous discourse on the digital in Germany. The exhibition *Fotografie nach der Fotografie* (1995), curated by Hulbertus von Amelunxen, Florian Rötzer and Stefan Iglhaut and displayed in a multitude of locations, is probably the most cited project associated with the appearance of digital technologies in German photography literature and will, as such, serve as a comparative counterpoint to Honnef's famous show and more generally to the non-reception of the digital in the work of the Becher students. This particular case study aims at understanding the reception of the digital *when it was addressed explicitly*, which ought concurrently to draw attention to positions where the use of digital tools *was not discussed*. *In Deutschland* constitutes the outcome of a much wider, consciously deployed effort to legitimate specific German documentary forms. *Fotografie nach der Fotografie* rather operates as a point of convergence of dissimilar objects, where various theoretical considerations meet a visual outcome of a supposedly similar origin – the digital "revolution" – often associated with the term and concept of "post-photography."

However, that particular terminology is not restricted to a corpus of theoretical texts associated with Mitchell's original concept. It can historiographically be defined by the convergence of several phenomena: the theoretical effort addressing recent technological developments in photography, a body of artists mostly concerned with the representation of the human body and various curatorial and editorial projects combining the two. As mentioned earlier, "post-photography" is not a concept that has been consequently analyzed by art historians. The phenomenon has been treated in recent histories of the medium, for example by Martin Lister in Liz Wells' recent edition of *Photography. A Critical Introduction*.[235] Even though the terminology used is "digital photography," the addressed phenomena roughly coincide. But while recent histories have reflected the fragmented and heterogeneous nature of "post-photography," earlier efforts to grasp the reaction to new technologies in the photography-specific field have proven less nuanced, constructing an apparently coherent corpus and creating a theoretical and art historical entity that does not, in fact, exist as such. The technicist approach, in which the object-representation relationship was over-evaluated, seems anachronistic, even outpaced by the technological evolution it based itself upon. In fact, the whole idea of post-photography, and the visual production created during the 1990s independently from the theoretical discourse, suffers from a similar obsolescence. The definition of the whole concept of post-photography therefore rather derives negatively, emanating from a movement of rejection of obsolete theories and an imagery that, despite obvious interest, is given little credit because of its alleged fascination with technology. There has been a sustained interest for some individual artists and for the dominant theme of this imagery: the manipulated

235 Liz Wells (ed.), *Photography. A Critical Introduction*, New York and London, Routledge, 2004 (1996).

body.[236] But despite the fact that they clearly constitute important examples of artistic production and the visual outcome of the appearance of digital technologies in the 1990s, it seems that neither their past nor current work, outside of this timespan, has awakened much interest. Nancy Burson's work for example, one of the major protagonists of this phenomenon, has never been processed exhaustively by art historians – despite the fact that her work is almost systematically mentioned in histories addressing the 1990s[237] –, a treatment which constitutes a striking difference if compared to the Becher pupils.[238] The coalescence of theory and imagery or the epistemological relevance of technological and societal developments in the study of this phenomenon have hardly been examined retrospectively, as if the conclusion that post-photography was an erroneous and naive concept had definitively put its study on hold, as much its theoretical as its visual expression. While the history of artistic post-photographic practices has yet to be made, it seems productive to survey some of the major curatorial and editorial projects that addressed this imagery throughout the 1990s and early 2000s, a period of emergence and generalization of digital retouching in Düsseldorf. This partial unfolding of events and fragmentary analysis of historiographical evidence doesn't aspire to operate as definitive demonstration. The outline of a certain pictorial and discursive tendency, countervailing the deadpan aesthetics of the Becher students, ought nevertheless to help in understanding the contextual preconditions that might play a role in the definition of Düsseldorf photography.

2 "FOTOGRAFIE NACH DER FOTOGRAFIE" (1995)

Fotografie nach der Fotografie was displayed in several locations in Germany and abroad in 1995 and 1996, most of which were not major internationally recognized institutions.[239] The important and widely distributed catalogue, available in a German and in an English[240] version, contains numerous essays by key theorists of transformations

236 Exhibited, for example, in *The Unreal Person. Portraiture in the Digital Age* at the Huntington Beach Art Center (1998), the *Je t'envisage* exhibition of the Musée de l'Elysée Lausanne (2004) or *Das zweite Gesicht. Metamorphosen des fotografischen* in the Deutsches Museum in Munich (2002).

237 William J. Mitchell for instance discusses Burson's *Warhead* series. See William J. Mitchell, *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*., op. cit., p. 179 – 181.

238 Obviously, the fact that the Becher students have been promoted by the art market also plays a central role in the differentiated diffusion and reception of post-photography and Düsseldorf photography.

239 Aktionsforum Praterinsel, Munich (D), Städtische Galerie, Erlangen (D), Brandenburgische Sammlung, Cottbus (D), Kunsthalle Krems (AT), Museet for Fotokunst, Odense (DK), Fotomuseum Winterthur (CH), Finnish Museum of Photography, Helsinki (FIN), Institute of Contemporary Art, Philadelphia (USA), Adelaide Festival (AUS).

240 Hulbertus von Amelunxen, Stefan Iglhaut, Florian Rötzer, Alexis Kassel (ed.), *Fotografie nach der Fotografie*, Munich, Verlag der Kunst und Siemens Kulturprogramm, 1996 and Hulbertus von Anelunxen, Stefan Iglhaut, Florian Rötzer, Alexis Kassel and Nikolaus G. Schneider (ed.), *Photography after Photography. Memory and Representation in the Digital Age*, Basel, G&B Arts International, 1996.

connected to the appearance of digital technologies in the photographic field, such as Lev Manovich, Timothy Druckerey, Peter Lunenfeld, Wolfgang Coy, and Amelunxen and Rötzer themselves. The introduction written by the curatorial team explicitly states that the focus of the project lies in the transformation of the "photographic image" and the "principles of photography" through digital technologies[241] that, in an era of "fascination for the Internet, cyberspace and virtual reality"[242] would not have been sufficiently considered. Florian Rötzer's following essay[243] explains somehow differently that the project aims to explore the implications of the "digitization of photography" in a "new media system," addressing "the understanding of photography and its characteristics," rather than investigating its "artistic or aesthetic qualities."[244] The aim is not, however, to study the "spectrum of possible interventions into the photographic image" – a concept Rötzer illustrates with his first footnote pointing at William J. Mitchell's *The Reconfigured Eye*.[245]

Fig. 25: *Fotografie nach der Fotografie*, catalogue cover of German edition, 1995
Fig. 26: *Fotografie nach der Fotografie*, exhibition poster, Fotomuseum Winterthur, 1996

Clearly, it would be wrong to retrospectively formulate a coherent and consistent position with such manifold essays, arguing that the project, labeled photography after photography, produces a unanimous and concordant discourse, centered around the idea that digital photography constitutes a fundamentally new means of representation and that its digital nature – technically and ontologically – is the precondition for this change. For instance, Amelunxen notes that "after photography

241 Hulbertus von Amelunxen, Stefan Iglhaut, Florian Rötzer, Alexis Kassel (ed.), *Fotografie nach der Fotografie*, op. cit., p. 9. "Maschinerie" in the German text.
242 Ibid.
243 Florian Rötzer, "Re: Photography," in ibid., p. 13 – 25.
244 Ibid.
245 Ibid.

comes photography, but it's altered by the after,"[246] stressing the fact that "the subject under discussion is neither the end of photography nor a post-photography"[247] but a redefinition or reconsideration of the medium in a new context. As such, the exhibition is primarily to be understood as a reaction to new technologies and a theoretical confrontation of its impact on photography, and not simply the display of artists using it:

> *The project attempts to investigate the extent to which a medium is currently undergoing changes, a medium which in our everyday lives has always been, and still is, understood as being documentary, reproductive and world-bound in character.*[248]

Right from the beginning the project is thus positioned (interrogatively) against the concept of reproduction or documentary, which brings along two weighty consequences. On the one hand, the project addresses the theoretical aspect of the raised issues; the catalogue contains important essays over 130 pages, summarizing or formulating interrogations on the impact of digital technologies on photography by Anglo-Saxon and European scholars. On the other hand, the project implicitly positions itself as an exhibition on the body in the digital age: although the preliminary remarks mention the examination of "photographic imaging strategies in the computer age, in particular in connection with the themes of body, space, identity, authenticity, and memory,"[249] the project predominantly revolves around the representation of the body. As the catalogue covers of the German (Fig. 25) and the English version, or the poster of the exhibition in Winterthur (Fig. 26) suggest, the body is central in the visual communication of the project. As such, it will be argued that the discourse on digital technologies in photography has been somehow absorbed by the discourse on the body in the digital age.

The notion of truth claim, while often present in theory, is mostly evacuated from the images shown in that context, as they *overtly* deconstruct that claim. Except for a few series such as Candida Höfer's *Türken in Deutschland* or Thomas Ruff's *Porträts*, it is important to remember that the body is persistently absent in Düsseldorf photography. The Bechers or Axel Hütte systematically and invariably exclude humans from their photographs, and if some traces of human presence sometimes remain in Candida Höfer's images, they are mostly limited to their motion blur. That absence raises the question of the spectator's relationship to certain types of images, which affects their reception: architecture photography is rather unlikely to be perceived as manipulated, which dissociates documentary forms from the very

246 Hulbertus von Amelunxen, "Photography after Photography. The Terror of the Body in Digital Space," in Hulbertus von Amelunxen, Stefan Iglhaut, Florian Rötzer, Alexis Kassel and Nikolaus G. Schneider (ed.), *Photography after Photography. Memory and Representation in the Digital Age*, op. cit., p. 123.

247 Ibid.

248 "Preliminary remarks on the project '*Photography after Photography*,'" ibid., p. 9.

249 Ibid.

idea of retouching. A manipulated body on the other hand, more immediately conveys a feeling of unease, which probably reflects a basic human response toward his fellows. The response to the retouched body thus derives on a visual level, influenced by a more or less verisimilar image, and on an "anthropological" level. Isabelle Graw empathically and almost passionately responds to Thomas Ruff's large *Porträts*, declaring that "the large-format print is [...] the antithesis of documentary photography. It bears no relation to the real dimensions of a person, and is therefore not an authentic, but an artificial representation."[250]

Images

The body – and the concept of post-humanity appeared in the early 1990s – clearly constitutes the central *topos* of the exhibition, which is correlated with digital technologies. Many images address the idea of the post-human, whose theorization reflects a general societal interrogation of the body and its representation. In the 1990s, the idea of shaping the body increasingly constitutes a paramount interrogation and fear as the emergence of genetic engineering, plastic surgery, bodybuilding and the increasingly important role of fashion models in mainstream media produced a series of new formulations of beauty, coincidently rejected by sub-cultural practices like branding, piercing and tattooing. *Post Human*, Jeffrey Deitch's exhibition for the FAE (Foundation Asher Edelman) museum for contemporary arts in Pully (1992)[251] and subsequently shown at the Deichtorhallen Hamburg,[252] constitutes one of the first to address the concept of the post-human in art. Deitch borrows the term post-human from biologist Leroy Hood, who in 1992 addresses the potential changes the decodification of the human genome might engender, entitled "Speculations on Future Humans."[253] Although the role of "computer science" is mentioned by Deitch, he aims primarily to address its implications in medicine and biomedical engineering, and not photography: "Computer science is perhaps a decade or more away from producing computers that will have more intellectual capacity and maybe even more creative intelligence than any human."[254] As such, the digital world is laid out as a utopian or dystopian possibility of change of human bodies, and the question of media is (not yet) being brought into discussion, although it is hinted at. While a small number of artists featured in the show actually use digital technologies, the prospect of potential societal changes induced by the digital is

250 Isabelle Graw, "Interview with Thomas Ruff," *Artis*, No. 41, October 1989, p. 55 – 58.

251 See Jeffrey Deitch (ed.), *Post Human*, exhibition catalogue, FAE Musée d'art contemporain, Pully, cop. 1992.

252 The exhibition was also shown at the Castello di Rivoli in Torino and the Destens Foundation for Contemporary Art Athens.

253 In an interview Deitch mentions the work of "neurologist" Leroy Hood and his article "Notes on Future Humans" (sic), given to him by artist Paul McCarthy, featured in the show. See Giancarlo Politi and Helena Kontova, "Jeffrey Deitch's Brave New World (interview)," *Flash Art*, No. 167, 1992 and Leroy Hodd, "Speculations on Future Humans," *Engineering and Science*, No. 55, Vol. 3, Spring 1992, p. 50 – 52.

254 Giancarlo Politi and Helena Kontova, "Jeffrey Deitch's Brave New World (Interview)," op. cit.

primarily discussed and illustrated in the catalogue (Fig. 27) the 3D rendered T-1000 of *Terminator 2* (James Cameron, 1991), virtual reality goggles allowing virtual sex, images of computerized growth simulations or mobile phones exemplify the potential changes technology *might* induce in the future, as they are either science fiction or restricted to limited use. The caption of the illustration of the catalogue addressing virtual sex (p. 62 – 63), argues for instance that "programs featuring every simulated sound and sensation are not only likely to be better in many ways than the real thing, for futures generations they may *become* the real thing," expressing the common fantasies associated with new technologies and the merging of physical and virtual realities.

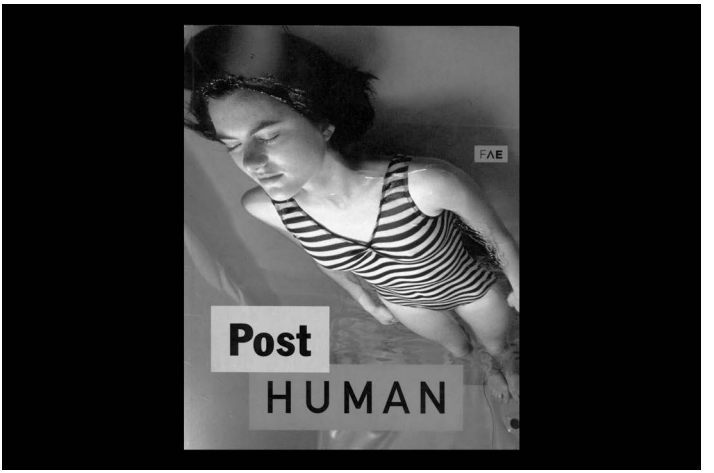

Fig. 27: Catalogue cover of *Post Human*, Pully, 1992

While laying out the fundaments of future preoccupation of media theories or the post-photographic debate, the exhibition focuses primarily on the body and the response of artists to these potential changes. The show interestingly features the work of Thomas Ruff, albeit not in relationship with retouching, as might be expected. His two portraits[255] allegedly express preoccupation with the body, as a typology or documentation of portraits in the late 1980s and early 1990s, in that particular technological context. His 1991 series of digitally retouched *Porträts*, one of which was featured as an edition in the *Texte zur Kunst* journal (No. 4, September 1991), might have ideally served the exhibition's prospect. But as will be more thoroughly discussed in section two, the digital interventions in Ruff's work are as often eluded. The journal's descriptive text of the modified portrait of Josef Strau (see Fig. 28) only mentions "the use of blue eyes," and the origin of the project: Ruff reacted to his *Porträts* being perceived as

255 *Porträt (E. Denda)*, 1989 and *Porträt (S. Weichrauch)*, 1988, only identified generically as "Portrait" in the catalogue. See Jeffrey Deitch (ed.), *Post Human*, op. cit, p. 130 – 131.

"a representation of German Arian youth." But the fact that they were digitally manipulated is not addressed.[256]

Interestingly, the very idea of post-photography was not formulated because of the actual link between those societal developments and the appearance of digital technologies. Rather, it emerges from the concurrent and contemporary presence of a new aesthetic and a new technology (digital photography), only associated through specific connections, which has produced an amalgamation. The idea of retouching – in real life as much as in imaging systems – obviously also provides an interconnection of both *topoi* and might have induced the use of the *post-* prefix in the post-human and in the photo-theoretical discourse.[257]

Fig. 28: Thomas Ruff, *Portrait 1991*, edition for *Texte zur Kunst*, No. 4, September 1991 (27 × 21 cm)

The new imagery represented by artists like Keith Cottingham or Nancy Burson derives from a new representation of the human body, which clearly constitutes the predominant subject. Most "post-photographic" artists share an interest in portrait photography, usually depicted frontally, with black or monochrome backgrounds,[258] suggesting a typological approach. The representation of the body relies on a critical interrogation of its functions, of its shape or role at the end of the twentieth century and of its history: the canonical body in art history has hardly been reinterpreted or questioned – representations correspond to the concomitant cultural evolution of corporeality throughout time –, and except for a few experiments of the historical avant-garde

256 "Descriptive text of edition," *Texte zur Kunst*, No. 4, September 1991. The information is for example explicitly stated in Winzen's monograph. See Matthias Winzen, op. cit, p. 222 and 248.

257 Obviously postmodernism provides another potential theoretical and terminological model, but similar issues (retouching of image *versus* retouching of bodies, etc.) and contemporaneity support the thesis of a connection between the post-human and post-photography.

258 This is for instance the case for Cottingham, Burson, Aziz and Cucher, Daniel Lee or the digital portraits of Orlan.

figures, it has mostly been depicted accordingly to the prevalent cultural model. Photographic representations, due to the archival functions of the medium, are more diverse, though. The outcome of their relationship to science has brought forth less standardized images which elude the canon constructed by painting, showing non-idealized depictions of death (e.g., Rodolphe A. Reiss or Timothy O'Sullivan), the "criminal" (e.g., Cesare Lombroso or Havelock Ellis) and hysteria (e.g., Albert Londe or Jean-Martin Charcot), even providing contemporary artists with a formal model. The obvious relationship between Nancy Burson's composite portraits, mentioned earlier, and Francis Galton has indeed been repeatedly noted.[259]

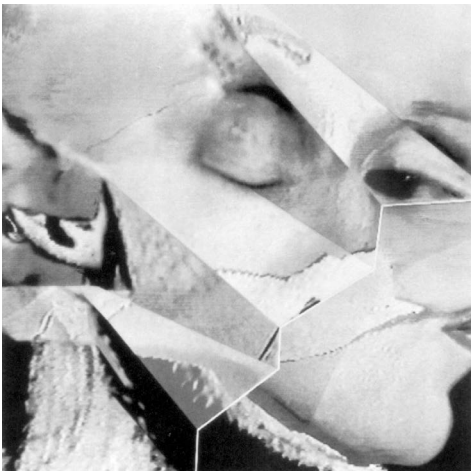

Fig. 29: Valie Export, *Untitled*, 1989 (b/w, 30 × 30 cm)

Besides these modes of interrogation of the human body, another strategy prevails combining such examinations with a focus on the "materiality" of the image of these bodies. In the catalogue we can observe a discrete type of images, visually enacting their digital nature. Deconstructing and undermining the two-dimensional image, they disclose a supposedly digital mechanism or feature. Valie Export's *Untitled* portrait series from 1989 (Fig. 29) shows an image of the artist, whose progressive dissolution into gradually smaller polygonal picture elements generated by a computer, reveals the technical

259 Allan Sekula counts among the early thinkers reflecting upon Nancy Burson's work, very critically responding to her 1986 book *Composites. Computer Generated Portraits*: "In one particularly troubling instance, this returned body is specifically Galtonian in its configuration. I refer here to the computer composites of Nancy Burson, enveloped in a promotional discourse so appallingly stupid in its fetishistic belief in cybernetic truth and its desperate desire to remain grounded in the optical and organic that it would be dismissable were it not for its smug scientism. For an artist or critic to resurrect the methods of bio-social typology without once acknowledging the historical context and consequences of these procedures is naive at best and cynical at worst. Alan Sekula, "The Body and the Archive," *October*, Vol. 39, Winter, 1986, p. 62. See also Nancy Burson, Richard Carling and David Kramlich, *Composites. Computer Generated Portraits*, New York, Beach Tree/William Morrow, 1986.

tool deployed to deconstruct the image. The two-dimensional images, showing a portrait, are confronted with their own deconstruction. In that particular case, it is only the two-dimensional image, not the body shown on the image, which is gradually dissolved.

This strategy clearly points to an interrogation of the medium in the context of the examination of the body itself, both aspects being interrelated.[260] It reflects recent technologies, addressing images increasingly present in mainstream media, where video feeds of characters were blended into computer animations. This example of deconstruction of the two-dimensional representation of the body has over time become a paragon for such practices, systematically connected with digital technologies. The exhibition *Ghost in the Shell* at the Los Angeles County Museum of Art in 1999/2000,[261] another milestone event whose contemporary section addresses digital technologies, exhibits, for example, Jim Shaw's very similar *Computer Degenerated Self Portraits*, suggesting similar interests and strategies in different cultural spheres. In *Fotografie nach der Fotografie*, works like Michael Brodsky's *Transmission Interrupted* (1995, see Fig. 30) and Michael Ensdorf's *Memory Grid* (1995), highlight the image's pixelated structure. Brodsky downloaded pornographic images in GIF format (a jpeg ancestor) in 1991, altering the protocol handling the reception of the files on his computer and hiding explicit content.[262] He addresses the fact that the collective visual memory provides the viewer with enough knowledge to replace the hidden parts, and immediately recognize the origin of the images.[263] Ensdorf emphasizes the architecture of the digital photograph, editing anonymous portraits found in digital archives, advertisements or family images.[264] The project addresses the way the memory "places, categorizes, labels" images and confronts it with the "collective historical memory"[265] of the viewer, thus prefiguring some key issues emerging from the widespread use of the Internet in the late 1990s and throughout the 2000s. The formulation of these two projects almost disturbingly prefigures Thomas Ruff's *nudes* and *jpegs* series and Jörg Sasse's *Tableaus*, as they address the exact same issues (image formats, circulation and

260 This strategy corresponds to the third step of the deconstruction [Vereinzelung] of the body that Peter Weibel has formulated in his concept of the "anagrammatic body." The first consists of close-up photographs of the body (e.g., close-up avant-garde photography), the second its recomposition (e.g., Hans Bellmer), the third the hybridization of the body with its representation or modelization, the fourth the digitally rendered virtual body (e.g., Aziz and Cucher). See Peter Weibel, *Der Anagrammatische Körper. Der Körper und seine Mediale Konstruktion*, exhibition catalogue (ZKM-Zentrum für Kunst und Medientechnologie, Karlsruhe, 2000), Cologne, Walther König, 2000.

261 Robert A. Sobieszek (ed.), *Ghost in the Shell. Photography and the Human Soul, 1850 – 2000: Essays on Camera Portraiture*, Los Angeles County Museum of Art and MIT Press, Cambridge and London, 2001.

262 Michael Brodsky, "Transmission Interrupted," in Hulbertus von Amelunxen, Stefan Iglhaut, Florian Rötzer, Alexis Kassel and Nikolaus G. Schneider (ed.), *Photography after Photography*, op. cit., p. 140 – 142.

263 See entry "Michael Brodsky, *Transmission Interrupted*," on *medienkunstnetz.de*. Available on http://www.medienkunstnetz.de/works/transmission-interrupted, accessed on June 27, 2018.

264 Michael Ensdorf, "Memory grid," in Hulbertus von Amelunxen, Stefan Iglhaut, Florian Rötzer, Alexis Kassel and Nikolaus G. Schneider (ed.), *Photography after Photography*, op. cit., p. 166 – 168.

265 Ibid.

categorization, collective memory, etc.). While all these examples display human bodies, their self-reflexive character diverges from what could be called the post-photographic iconography, more directly concerned with body, mostly used to advocate the project.

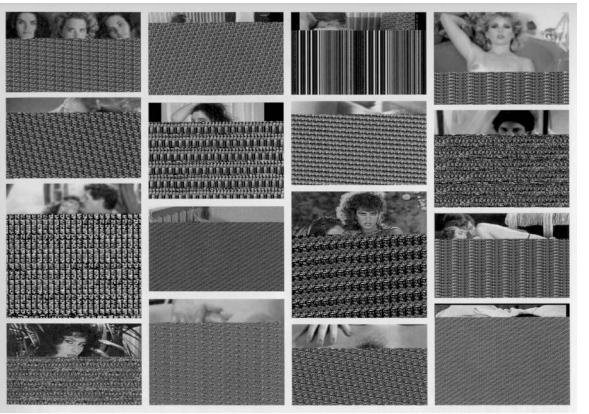

Fig. 30: Michael Brodsky, *Transmission Interrupted*, 1995 (16 photographs, variable sizes)

Aside from the photographs focusing on the human body and the overt exposure of the digital structure of the image, a further distinctive category characterizes some of those images: an overtly manipulated character. Most of the images associated with that *topos* can clearly be identified, at first sight, as having been subjected to some kind of visual manipulation or retouching. Not only do they differ quite explicitly from mainstream or usual representations of the human body – through the fact that they are often decontextualized socially, culturally and geographically through the use of monochrome backgrounds, the almost systematic absence of paraphernalia, clothes or architectural elements –, but the bodies themselves have been altered extensively or their depiction seems, somehow, odd. Some artists, such as the Venezuelan duo Aziz and Cucher, erase the human senses (nose, eyes, ears, etc.) from the bodies. The *Dystopia* series, with its unique dehumanized character's (e.g., *Maria*, 1994), has become paradigmatic of post-photographic imagery. Hardly any publication or exhibition addressing digital technologies fails to include them. Keith Cottingham's famous series *Fictitious Portraits series* (1992, Fig. 31), on the other hand, doesn't build on an anatomically non-coherent depiction of the human body, but operates by multiplying a manipulated self-portrait, inducing doubt about the realism of the depiction through its duplication. The *Untitled (Single)*, *Untitled (Double)*, *Untitled (Triple)* images function interdependently, the prints being therefore most of the time shown in resonance to one another. If retrospectively it has to be argued that despite an obvious common ground, these artistic practices differ considerably, it is still surprising to which extent the images resemble each other. Most works of Nancy Burson, Keith Cottingham, Aziz and Cucher, and some series of Jim

Shaw, Daniel Lee and Valie Export, comply with what could also be seen as the outcome of a manifesto – although there are no particular links between the artists. This uncommonly coherent body of images, the visual expression of post-photography or digital aesthetics, could be defined by two main features: the manipulation of the human body and the manipulation of the image. The mostly or at least partially naked bodies and portraits are frequently shown on monochromatic, mostly black backgrounds, completely decontextualized. The images address this visual enactment of the manipulation of the body, which here converges with the idea of the manipulation of the image. The composite photographs overtly give away the fact that they have been retouched. But more than the fact that they might have been digitally manipulated, they are interesting because they express, visually and technically, a (supposed) state of photography *after* photography. This new kind of imagery embodies the outcome of the radical rupture post-photographic theories have advocated. Aesthetically uncanny, those photographs are indeed dissimilar to any other kind of strictly photographic imagery. And while the color and light contrasts between bodies and background somehow recall baroque paintings, the imagery still differs considerably from what the observer is used to, and thus reinforces this idea of a new media or system of representation. These images were legitimated on one hand by the idea of post-photographic practices, embodying what Mitchell and his followers had circumscribed, and as a new imagery responding to issues related to new beauty ideals. Although there hasn't been an explicit art historical effort to evaluate what came to be considered a movement or at least a body of related photographers, several exhibitions and publications embodying this aesthetic trend have eventually advocated an idea based on questionable assumptions. In the introduction of the *Fotografie nach der Fotografie* catalogue, Rötzer explicitly associates Nancy Burson with "digital image processing," while her composite portraits are not always – technically – digital.[266] After retrospective analysis, one realizes that images showing human bodies are not digital at all.

Theories

The various essays in the catalogue address numerous questions and consider potential changes that turned out to be very relevant. Rötzer addresses the circulation of images through digital communication systems and questions the documentary value and the impact on author photography those technical changes might have, sketching out many of the central issues discussed nowadays. Despite a title apparently suggesting the replacement of photography by something new, an endorsement of Mitchell's apparent discourse of rupture, the project doesn't claim the end of the medium at all. Despite the titles,

266 Florian Rötzer, "Preliminary remarks on the project 'Photography after photography,'" in Hulbertus von Amelunxen, Stefan Iglhaut, Florian Rötzer, Alexis Kassel (ed.), *Photography after Photography*, op. cit., p. 9.

which seem to suggest a radical change – "Digital (R)evolution" (Jacques Clayssen), "In Photographic Memory" (Wolfgang Coy), "Image Simulations, Computer Manipulations" (Martha Rosler) – the various essays are nuanced. Lev Manovich's "The Paradoxes of Digital Photography" builds on Mitchell's argumentation to show that "digital photography did not subvert 'normal' photography, since 'normal' photography never existed."[267] But while acknowledging differences in practice, aesthetics or circulation, the project uses the concept of rupture as a pitch. Contemporary to the images and the discourse it analyses, *Photography after Photography* is clearly intertwined with a phenomenon it seems to be, incidentally, a part of.

Fig. 31: Keith Cottingham, *Ficticious Portraits (Twins)*, 1992 (121.9 × 101.6 cm)

In terms of argumentation, photography is often conceived by the catalogue's texts as a medium, whose truth claim is endangered, a claim attested by various illustrations. Independently from the discourse itself, which often relativizes the impact of these technologies and contextualizes the concept of retouching, it appears that numerous examples of photo-manipulation published in the media focusing yet again on the human body are used as argumentative illustrations. While Mitchell concentrated on various types of historical images and their use in various contexts (e.g., Fig. 21), the editorial selection in *Fotografie nach der Fotografie* uses predominantly press images of human bodies. Victor Burgin and Jacques Clayssen's articles are illustrated by composite cover girls reflecting the ethnic diversity of the United States, both subtitled "the new face of America."[268] The now famous police ID photograph of O. J. Simpson on the covers of

267 Lev Manovich, "The Paradoxes of Digital Photography," ibid., p. 62.

268 The *Time* magazine cover (special issue, Fall 1993, Vol. 142, No. 21) was created by Nancy Burson and the Mirabella cover (Sept. 1994) by Japanese photographer Hiro (Yasuhiro Wakabayashi). See for example Greg Carter, *The United States of the United Races. A Utopian History of Racial Mixing*, New York, NYU Press, 2013.

Newsweek (in a light-skinned version) and *Time* magazine (in a dark-skinned version) is used,[269] as are numerous body related manipulations or computer-generated images (e.g., the 3D Marilyn Monroe, see Fig. 32), which again derive from a conception of the body generated with digital tools. Clearly, the key formal feature shared by those images is the obvious and patent fact that, in the context of the 1990s, they *look* digital. The consideration that most of the time they have not necessarily been produced using digital technologies (e.g., Nancy Burson) or that the use of digital technologies is not mentioned in the context of the manipulation (e.g., O. J. Simpson) is at this stage irrelevant. It is rather their perception, and their inscription in a broader discursive response, which seems to play a key role.

Fig. 32: Illustrations in the *Fotografie nach der Fotografie* catalogue: 3D rendering of Marilyn Monroe, p. 48

The evaluation of *Fotografie nach der Fotografie* clearly shows the proclivity of scholars to associate the discourse on the digital with considerations of the representation and hypothetical evolutions of the construction of the body. Numerous examples of such convergence can be found in the mid-1990s, as much in Germany as in other cultural contexts. The recurrent merging of the discourse on the digital and interrogations of the body, which were abundant at that time – corporality is also the main focus of the one hundredth Venice Biennial 1995 – can for example be found in the *Kunstforum* 132 (1995), edited by Florian Rötzer (Fig. 33). The publication, illustrated by a photograph from the *Dystopia* series of Aziz and Cucher, gathers similar artists as the *Fotografie nach der Fotografie*, such as the cited Colombian duo, as well as Lynn Hershman and Inez van der Lamsweerde.

269 *Time* magazine was accused of racism as its cover attributed O. J. Simpson's alleged murder of his wife to his African-American origin, displaying a "diabolical" version of the original photograph, as Clayssen notes. See Jacques Clayssen, "Digital (R)evolution," in Hulbertus von Amelunxen, Stefan Iglhaut, Florian Rötzer, Alexis Kassel (ed.), *Photography after Photography*, op. cit., p. 74.

It also features articles by Lev Manovich and Rötzer, which, much like various texts in the *Fotografie nach der Fotografie* catalogue, enact the convergence of interrogations concerning corporality and reflections associated with the appearance of these new technologies. Here again, the discourse on the manipulation of the body has overrun the discourse on the digital, both being at the time closely connected.

Fig. 33: Cover of *Kunstforum International*, No. 132, Winter 1995

In the 1990s, digital retouching is thus primarily displayed through the representation of the body, a subject only incidentally present in Düsseldorf photography. The retouched nature of (some) Düsseldorf photography, whose early digital photographs do not exhibit their digital nature, will thus be – to a certain extent – ignored. As will be analyzed in part three and four of this study, there will be no reception of the digital components of their work in the 1990s, while in the 2000s it will be acknowledged as such and increasingly associated with scholars addressing the digital, such as Vilém Flusser and Paul Virilio.[270] Besides the fact that Düsseldorf photography doesn't display its retouched nature, it has to be emphasized that the photographic genre of the early retouched images – in Ruff and Gursky's case primarily architecture photography – clearly differs from the common outcome of post-photography, primarily concerned with "portraiture," "the body" and "the self".[271] The confrontation of Düsseldorf photography and post-photography thus highlights two discrete rejections of the body: its repression by Düsseldorf photography and the promulgation of an improved or altered post-human condition.

When Jonathan Lipkin's *Photography Reborn. Image Making in the Digital Era* mentions Andreas Gursky's digital montages in his 2005 book, his overall project addressing digital photography is

270 For example in Régis Durand, *Disparités. Essais sur l'expérience photographique* 2, Paris, La différence, 2002, p. 23 – 24.

271 Jonathan Lipkin, *Photography Reborn. Image Making in the Digital Era*, op. cit.

clearly dominated by these categories. Even in a period when the digital is acknowledged and pragmatically addressed by numerous scholars in the Düsseldorf context – Kai-Uwe Hemken writes one of the first articles focusing on digital photography in the work of Ruff and Gursky in 2000[272] –, Lipkin addresses the body, which shows to which extent the discourse on the post-human has shaped the discourse on digital photography.[273] Overtly retouched images of the body, which acted as a counter-model for Düsseldorf photography, and architecture photography as a specific genre historically associated with the documentary and re-inscribed in that tradition in the 1960s and 1970s, thus sheltered early Düsseldorf photography from being perceived as digital, a situation only reversed a decade later. Digital retouching in Düsseldorf has thus not only been disregarded because of its invisibility and the association between the digital and the body. The association of the Bechers students with a documentary tradition and antecedent visual models prohibits an explicit differentiation with former images, and thus orients their reading.[274] Not only are their images retouched without it being apparent, but they can more generally be inscribed in a specific grammar or documentary style deriving from the newly built German documentary paradigm. Despite certain formal differences in their work (e.g., Gursky's panoramic formats or Ruff's color *Häuser*), Düsseldorf photographers blend into a tradition that plays a central role in their reception. Only the concurrence of three factors will eventually change that stance. Several artists will explicitly display the digital nature of their work (e.g., through Ruff's *nudes* series). The existence of digital retouching technologies will be generally acknowledged and will thus impair the reception of the images. Finally, it is the weakening of imagery connected to the body that will eventually lead to a response toward the use of digital tools and strategies in their work.

272 Kai-Uwe Hemken, "Von Sehmaschinen und Nominalismen. Anerkennungen zur digitalen Fotografie von Andreas Gursky und Thomas Ruff," in Monika Steinhauser and Ludger Derenthal (ed.), *Ansicht, Aussicht, Einsicht. Andreas Gursky, Candida Höfer, Axel Hütte, Thomas Ruff, Thomas Struth. Architekturphotographie*, exhibition catalogue (Kunstgeschichtliches Institut der Ruhr-Universität Bochum, Museum Bochum, 2000), Düsseldorf, Richter Verlag, 2000.

273 Jonathan Lipkin, *Photography Reborn. Image Making in the Digital Era*, op. cit.

274 Steven Skopik uses the concept of "primacy" to establish the impact of a visual differentiation between image types, defined by either their familiarity or their unknowingness. See Steven Skopik, "Digital Photography. Truth, Meaning, Aesthetics," op. cit., p. 264.

PART 2

ARCHEOLOGY OF COMPUTING:

PHOTO-CONCEPTUALISM,

THE BECHER BECHER BECHER BECHER PROTOCOL PROTOCOL PROTOCOL PROTOCOL AND EARLY COMPUTER ART ART ART

IT IS NO LONGER A QUESTION OF IMITATION, NOR DUPLICATION, NOR EVEN PARODY.

IT IS A QUESTION OF SUBSTITUTING THE SIGNS OF THE REAL FOR THE REAL, THAT IS TO SAY OF AN OPERATION OF DETERRING EVERY REAL PROCESS VIA ITS OPERATIONAL DOUBLE,

A PROGRAMMATIC, METASTABLE, PERFECTLY DESCRIPTIVE MACHINE THAT OFFERS ALL THE SIGNS OF THE REAL AND SHORT-CIRCUITS ALL ITS VICISSITUDES.[1]

1 Jean Baudrillard, *Simulacra and Simulation*, Ann Arbor, University of Michigan Press, 1994 (1981), p. 4.

The association of the discourse on the digital in the 1990s with the idea of post-photography – through its expression as a post-medium state as much as its expression as a post-human condition – veils a certain number of productive leads that allow a better understanding of the uses of digital technologies in Düsseldorf, but that have hardly been pursued by its historiography. The aim of this second chapter resides primarily in the exploration of a broader context from which the work of Becher students emerged, focusing on the role and uses of photography in conceptual art in the 1970s, as much in the United States as in Europe. As will be argued throughout this research, these photo-conceptual strategies, in which the "mathematical" formalization of reality (i.e., a depictive process based on set rules and fixed protocols) plays a key role, can be interpreted as a primitive form of computing. The link between Düsseldorf photography and these early "digital" mechanisms is chiefly structural: the work of Bernd and Hilla Becher and their protocoled depictions of industrial buildings, a systematic documentary endeavor, has converged with the work of these conceptual artists since the late 1960s and has led to the understanding of their typologies *as* conceptual, aesthetically and institutionally.

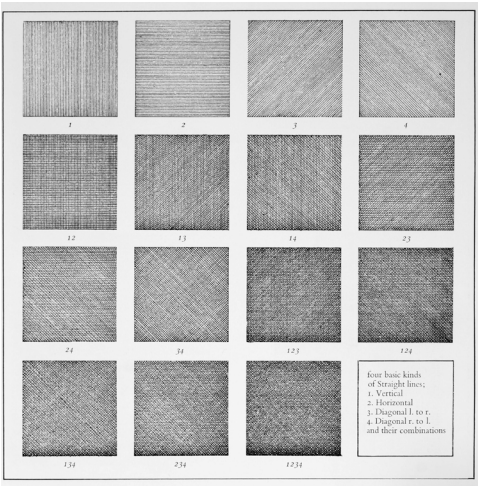

Fig. 34: Sol LeWitt, *Four Basic Kinds of Straight Lines and Their Combination*, 1969 (artist's book)

The genealogy of images produced or retouched digitally in the Düsseldorf context ought to be traced back to that context, because the use of the protocoled depiction deployed by the Bechers considerably shaped the production of Düsseldorf photography, as it outlined its compositional and conceptual strategies and defined its formal output. But clearly the typological work of the couple is reminiscent of a much larger context in which serial imagery, one of the core processes of photo-conceptual undertakings, developed into a paramount artistic strategy. The mechanisms that appeared at that time should consequently be further explored to understand the work of the young generation. A particularly resilient strategy, which can

clearly be accounted for in the Bechers' work and in their students work, indicates a strong interconnection between the two generations: the application of the Becher protocol and its resulting formal outcome. The set of rules applied by the Bechers to satisfy their search for an objectified depiction of industrial architecture – "as objective as possible," they commonly state –, derives from a context shared by many conceptual and photo-conceptual artists in the 1960s and 1970s and could more generally be inscribed in the nascent mathematical formalization (i.e., digitization) of the world. Klaus Honnef, in one of the first studies on conceptual positions, published already in 1971, programmatically combines these two entities – concept art and an emerging "digital" (i.e., based on digits) codification of reality. In his book *Concept Art*,[2] Honnef dissociates the dematerialized idea – one of the core processes of conceptual art as it was defined by Sol LeWitt[3] – from the material outcome of these strategies (e.g., LeWitt's "structures" or drawings). To state his argument, he uses a metaphor borrowed from computer language (whose implications he could not have been aware of at the time): while the immaterial, the idea, is described through the notion "software," the visual and sculptural output is interpreted as "hardware." Since the period of generalization of computer technology in the 1990s, these two terms have become inseparable from that field: hardware stands for every physical object associated with computing (micro-chips, memory, hard drives, etc.) and software for the processes they sustain (applications, virtual memory, computing, etc.).

This surprisingly early evocation of digital technologies and computational mechanisms, and the dissociation of two poles of conceptual art – the processual and the physical – provides a starting point from which to assess various mechanisms and outputs of such strategies in their relationship to photography and, ultimately, allows the apprehension of a new conception of photographic representation. The production of images, rather than the mere depiction of a physical reality, and the strategies defining the generative processes underlying that production, plays a central role in Düsseldorf photography, whose work has been freed of the duty to depict. While in the context of photography as an institutionally autonomous object this emancipation occurs in the 1980s, in an artistic context the shift happened in the footpath of contextual art, roughly one decade earlier. And it was not achieved by photographers but rather – to use Douglas Fogle's terminology – by "artists using photography."[4]

2 Klaus Honnef, *Concept Art*, Cologne, Phaidon Verlag, 1971.

3 See Sol LeWitt, "Paragraphs on Conceptual Art," *Artforum*, Vol. 5, No. 10, 1967 and Sol LeWitt, "Sentences on Conceptual Art," *Art and Language*, Vol. 1, No. 1, May 1969.

4 See Douglas Fogle (ed.), *The Last Picture Show. Artists Using Photography. 1960 – 1982*, op. cit.

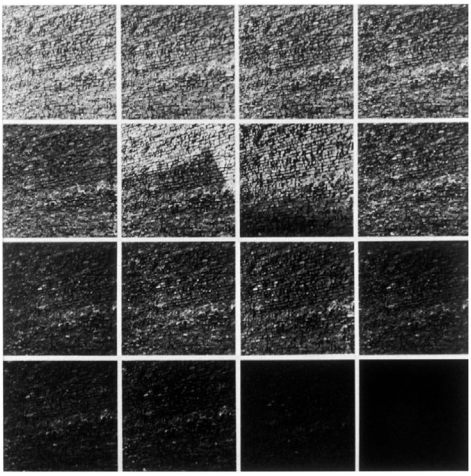

Fig. 35: Sixteen photographs from Sol LeWitt's artist book *Brick Wall*, Tanglewood Press, 1977

A PRE-DIGITAL MECHANISMS IN CONTEXT 1960S/1970S

While the set of rules and protocols explicitly or implicitly established by conceptual artists may exist on a theoretical or abstract level, hence embodying one of the key mind-sets of conceptualism,[5] the use of such tools in combination with photography by conceptual artists *and* photographers indirectly connected with conceptualism (e.g., Hans-Peter Feldmann or the Bechers) yields a tangible visual outcome. Comparing such a visual outcome with a similar strategy not based on photography can yield interesting insights into the specificities of photo-based artworks. The comparison of a conceptual drawing emerging in that context, for example Sol LeWitt's *Four Basic Kinds of Straight Lines and Their Combination* (1969, see Fig. 34), with an equivalent piece, is in that respect productive: if the drawing remains an autonomous object, a set of photographs such as the multiplication and serial evolution in LeWitt's *Brick Wall* (1977, see Fig. 35)[6] not only remains connected to *what* it represents, but it is also necessarily attached to *how* it represents.[7] Photography had been primarily used by conceptual artists as a mechanical means of reproduction with a

5 Art as idea is only one of the many converging and diverging definitions of such practices, language as art being another.

6 The thirty-two-page artist book reproduces the photographs of a brick wall outside LeWitt's studio, at various moments throughout the day.

7 On his famous text on photography and conceptual art, Jeff Wall has, for instance, stressed photography's "heavy burden of depiction." See Jeff Wall, "'Marks of Indifference.' Photography in, or as, Conceptual Art," in Douglas Fogle, *The Last Picture Show*, op. cit., p. 44 (originally published in Ann Goldstein and Anne Rorimer, *Reconsidering the Object of Art, 1965 – 1975*, exhibition catalogue, Los Angeles Museum of Contemporary Art, 1995).

non-artistic status, documenting earthworks (e.g., Robert Smithson) or actions (e.g., Vito Acconci). But as the confrontation of *Four Basic Kinds of Straight Lines and Their Combination* (1969) and *Brick Wall* (1977) shows, photography increasingly loses its connection with the reality it depicts, becoming an autonomous conceptual tool. That phenomenon is discussed in Nancy Foote's famous 1976 essay "The Anti-Photographers," for example. In the section focusing on the Bechers, Foote stresses the fact that "Bernd and Hilla Becher ignore the architectural or engineering achievements that make up their work [i.e., the depiction], photographing them so as to categorize types, compare similar formal elements, and arrange them in sequences [...]. The Bechers claim not to care whether or not the resulting grids of images are works of art; nevertheless, their relevance to current art ideas [i.e., photography as a conceptual tool] is inescapable."[8] The autonomous self-reflexive image used in the context of serial or typological arrangements thus increasingly prevails in conceptual strategies, more than the image as strict "document."

The increasing autonomy of the photographic image from its referent has clearly contributed to its institutionalization and its convergence with conceptual art,[9] primarily through the set of rules which have been used to achieve that autonomy: grid constructions, typologies, set camera angles, clearly defined frames and frontal constructions offer the formal preconditions which allows the photo-conceptual reading of these depictions. The formal contingencies resulting from that strict setting play a key role in the dialogue *between* an autonomous image [Bild] and a depiction connected to something that is portrayed [Abbild]. The application of these rules and protocols also epitomizes, to a certain extent, a middle ground between the concept and the object, as their output can be interpreted as a (metaphorical) space *between* image and depiction. That space is explicitly exemplified by Jan Dibbets' visualizing experiments of the *Perspective Drawings* series (1969, Fig. 36).[10] The Dutch artist photographically records a trapeze drawn on the wall, materializing a square, which only exists in that interstice. That space is also enacted implicitly by Victor Burgin's *Photopath* (1969), in which several representational layers merge into a dialogical visual model. The British photographer stresses the contiguity of reality and its depiction with his 1:1-scale photograph of a floor, laid out on that very floor, superimposing both "layers." Through various strategies, Burgin, Dibbets and LeWitt consequently

8 Nancy Foote, "The Anti-Photographers," *Artforum*, Vol. 15, No. 1, September 1976, reprinted in Douglas Fogle (ed.), *The Last Picture Show. Artists Using Photography. 1960 – 1982*, op. cit., p. 26 – 27.

9 For the description of the shift in the reception of the Bechers from industrial photographers to photo-conceptual artists, see especially Jeffrey Ladd, "'We had the feeling that people there understand what we do.' On the Reception of Bernd and Hilla Becher's Work in the United States 1968 – 1991," in Werner Lippert and Christoph Schaden (ed.), *Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography*, op. cit.

10 The critic Marcel Vos emphasizes Dibetts' use of photography in order to "visualize," rather than to "represent." Marcel Vos, "Some Work of Jan Dibbets," *Flash Art*, No. 38, January 1973, p. 18. Quoted in Erik Verhagen, "Jan Dibbets. Du concept à sa visualization," in Danièle Méaux (ed.), *Protocole et photographie contemporaine*, St. Etienne, Publications de l'Université de St. Etienne, 2013.

address the images themselves, freed – to a certain extent – from what they depict; Burgin does so by creating a tautological resonance between image and referent, Dibbets stresses the intermediary space *between* image and referent, and LeWitt focuses on a serial permutation of depictions, in which the connections with the depicted wall is irrelevant, as the comparison with the drawings has shown.

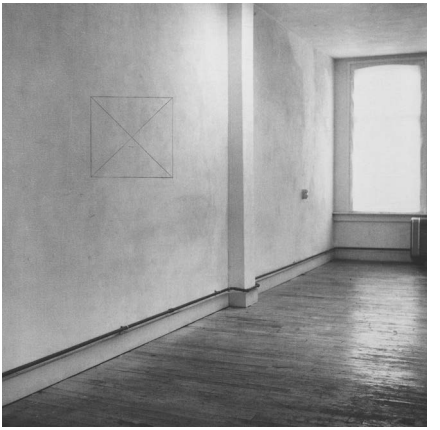

Fig. 36: Jan Dibbets, *My Studio 1, 1: Square on Wall Perspective Drawings series*, 1969 (b/w photograph, 110 × 110 cm)

While these conceptual projects address the reflexivity of the photographic medium, the German, and more specifically the Düsseldorf context is defined by another set of directives. Outcome of the confrontation of reality with grid systems and orthogonal depictions, the Becher protocol can be singled out as a very specific set of rules, established for a specific documentary purpose. Adapted to a certain extent by the younger generation and subjected to a specific legitimating discourse addressing documentary forms, it proceeds differently than strictly conceptual artists, a differentiation the historiography of Düsseldorf clearly reflects: the work of the students of the Bechers is hardly ever connected to conceptual art, and even the association with Hans-Peter Feldmann, active in Düsseldorf, is rather rarely used as a source for understanding their work.[11] Methodologically, the clearly delimited parameters of the Becher protocol and the historical inscription of its connected discursive field – the German documentary paradigm –, can be confronted and evaluated in relationship with the work of Ruff, Gursky and Sasse, precisely *because* of their resilience in their work. Without addressing broader epistemological categories, the study of the protocol and its formal consequences – frontal

11 Peter Galassi mentions that Kaspar König organized workshops at the Kunstakademie Cologne, where Gursky had shown interest for Dan Graham and especially Jeff Wall. Gursky was also "aware" of the work of Hans-Peter Feldmann. See Peter Galassi, "Gursky's World," op. cit., p. 19 – 20. Eva Witzel's account on Gursky's influences is primarily based on Galassi. See Witzel Eva, *Die Konstitution der Dinge. Phänomene der Abstraktion bei Andreas Gursky*, Bielefeld, transcript Verlag, 2012, p. 312 – 313.

constructions, serial imagery, etc. – allows for the reconstruction of the relationship of the Becher students with what they depict, and more generally facilitates understanding of the reconfigurations their work embodies, in a very tangible manner. The connections between conceptual art and conceptual photographers further reveal the archaeology of the numerical formalization of reality: the use of protocoled and systematic photographic depiction in the 1960s and 1970s can be understood as an archaic model of computing, connecting the use of digital technologies in Düsseldorf to a "new" contextual field. To evaluate the central mechanisms of these transformations of photographic representation, the "two" models reflecting them – conceptual art *and* photography – ought to be consequently explored, leading to three separate questions: What role has photography played *in* conceptual art? How have transformations in the conception of photographic depiction impacted the work of the Becher students? And ultimately, how is photo-conceptualism connected with the digital codification of the world?

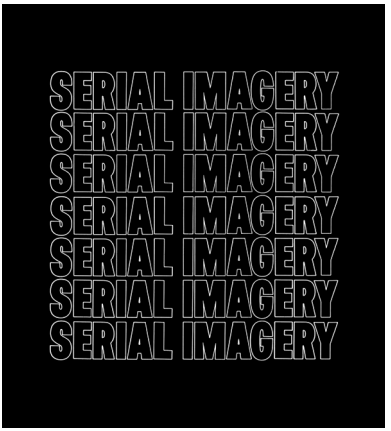

Fig. 37: Cover of John Coplans, *Serial Imagery*, 1968

This introductive part pursues a primarily formal-aesthetic approach, inscribing key proponents of conceptual art and photo-conceptualism into a theoretical framework in order to highlight specific mechanisms and strategies connecting them with Düsseldorf photography. The historical associations and contextual common ground will consequently be excluded from its articulation: Bernd and Hilla Becher constitute a strong yet indirect link between concept art and their pupils. As various scholars have already established, a scene quickly formed around major American and European artists at that time. Susanne Lange has highlighted the central role of Konrad Fischer in the circulation of minimal and conceptual art in Europe,[12] Armin Zweite the general

12 Susanne Lange, *Was wir tun, ist letztlich Geschichten erzählen … Bernd und Hilla Becher. Eine Einführung in Leben und Werk*, Munich, Schirmer/Mosel, 2005.

Düsseldorf context before Bernd Becher's teaching at the Kunstakademie[13] and Gerald Schröder the reception of the Bechers in Germany and their relationship with conceptual art.[14] Numerous scholars have studied conceptual art more generally – Alexander Albero[15] or Jon Bird and Michael Newman[16] most prominently –, and reflected upon the key moments that gathered American and European artists and photographers. *Konzeption – Conception* in Leverkusen (1969) constituted an important point of convergence, where conceptualists such as Sol LeWitt, Joseph Kosuth, On Kawara, Lawrence Weiner and Jan Dibbets – many of which were presented at the *documenta 5* in 1972 in Kassel as well – would meet Ed Ruscha and Bernd and Hill a Becher.[17] By the early 1970s, most of the quoted artists were represented by a handful of gallery owners (Seth Siegelaub, Konrad Fischer, etc.) and were exhibited together by a relatively small number of curators (Klaus Honnef, Harald Szeemann, Pontus Hultén, etc.). Although the contextual elements could be productive for understanding specific aspects of the visual production of that period,[18] our articulation will primarily pursue interconnections at a formal and aesthetic level, reaching out to a more wide-ranging understanding of photographic *representation*, through the articulation between conceptual art and the Düsseldorf School.

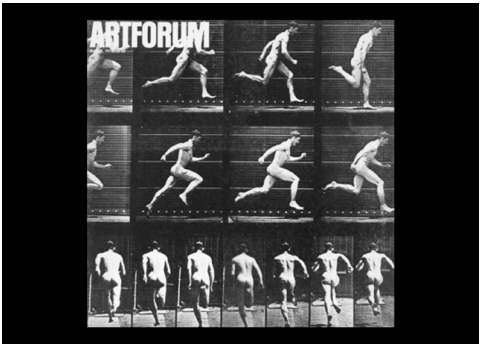

Fig. 38: Cover of *Artforum*, March 1973

13 Armin Zweite, "Photographie et/comme art à Düsseldorf 1958 – 1976," in Armin Zweite and Fabrice Hergott (ed.), *Objectivités. La photographie à Düsseldorf*, op. cit.

14 Gerald Schröder, "Positionings. On the Reception of Bernd and Hilla Becher's Photographic Oeuvre in the Federal Republic of Germany 1965 – 1990," in Werner Lippert and Christoph Schaden (ed.), *Der Rote Bulli. Stephen Shore and the New Düsseldorf Photography*, op. cit.

15 See Alexander Alberro, *Conceptual Art and the Politics of Publicity*, Cambridge (MA), MIT Press, 2003, Alexander Alberro and Blake Stimson (ed.), *Conceptual Art. A Critical Anthology*, Cambridge (MA), MIT Press, 1999 or Alexander Alberro and Sabeth Buchmann, *Art after Conceptual Art*, Cambridge (MA), MIT Press, 2006.

16 Jon Bird and Michael Newman (ed.), *Rewriting Conceptual Art*, London, Reaktion Books, 1999.

17 The "discovery" of the Bechers in Europe by Robert Smithson, Douglas Huebler or Ileana Sonnabend is for example accounted for in Chris Balaschak, "Between Sequence and Seriality. Landscape Photography and Its Historiography in Anonyme Skulpturen," *Photographies*, Vol. 3, No. 1, March 2010.

18 The formal relationship between Ana Mendieta and the Bechers has, for example, never been investigated, despite her direct relationship with them. Mendieta was Carl Andre's lover, who was a very close friend of the Bechers.

1 CHRONOPHOTOGRAPHY, SERIAL ORDER AND TIME

Numbers, repetition and serial constructions, as they were formulated by numerous artists throughout the 1960s, are symptomatic of both Joseph Kosuth's linguistic and Sol LeWitt's processual conceptualism,[19] as the semiotic expression of language and as the mathematical formulation of an idea. Despite being per se anti-visual and anti-pictural,[20] repetition in serial compositions, in narrative forms or sequential constructions innervate multiple cultural productions in the 1960s and the 1970s. John Coplans' book and exhibition *Serial Imagery* (1968, Fig. 37) sought for such models in the history of the arts from Monet to Warhol, invoking in the catalogue as much Gertrude Stein's repetitive poetry as serial constructions in Beckett's plays.[21] He empathically concludes his essay, stating that "there are sufficient indications in the emergence of serial imagery over the past decade in the United States that the rhythms attendant upon the serial style ritually celebrate, if only obliquely or subliminally, overtones of American life,"[22] suggesting an environment in which serial orders were ubiquitous.[23]

That position is also explicitly enacted and critically approached by Dan Graham's *Homes for America* or physically and metaphorically deconstructed by Gordon Matta-Clarks' *Splitting* (1974): both address "serial" housing for low-income citizens, and more generally the social geography of architecture. Through various channels, chronophotography as a serial construction was also rediscovered at that time, by important art publications – the cover of the *Artforum* from March 1973 features an image of Eadweard Muybridge (Fig. 38) – and artists alike. The chronophotographic model is explicitly articulated by Sol LeWitt in his project for *Artists and Photographs*, edited by Marian Goodman in 1970, *Schematic Drawing for Muybridge II* or by Dan Graham in his text "Muybridge Moments" (*Arts*, February 1967). It is further enacted implicitly in numerous chronophotographic performance documentations such as Keith Arnatt's *Self-Burial* (1969), featured in *Life* magazine in August 1970. The magazine as "artistic" medium, used by numerous artists as an

19 See for example Alexander Albero, "Reconsidering Conceptual Art, 1966–1977," in Alexander Albero and Blake Stimson (ed.), *Conceptual Art. A Critical Anthology*, Cambridge (MA), MIT Press, 1999.

20 In his statement for *documenta 5* (1972), Robert Smithson for example stresses the importance of language in art against the visual: "I am for an art that takes into account the direct effect of the elements as they exist from day to day apart from representation." Robert Smithson, "Cultural Confinement," in Alexander Albero and Blake Stimson (ed.), *Conceptual Art. A Critical Anthology*, op. cit., p. 281. Originally published in *documenta 5*, exhibition catalogue, Kassel, 1972 and reprinted in *Artforum*, Vol. 11, No. 2, *October* 1972.

21 John Coplans, *Serial Imagery*, exhibition catalogue (Pasadena Art Museum, 1968), New York Graphic Society, 1968, p. 16.

22 Ibid., p. 18.

23 In the perspective of political philosophy, that specific context could be correlated with economical overtones of the "late capitalistic era." See Fredric Jameson, *Postmodernism or the Cultural Logic of Late Capitalism*, Durham, Duke University Press, 1991 and, in the more specific context of photography books, Shane McCord, *Pushing Books. The Bookwork as Democratic Multiple in the Late Capitalist Era*, master thesis (unpublished), Department of Art History, University of Concordia, Montreal, Quebec, Canada, 2008.

answer to the critical position toward institutions authenticating artistic production, incidentally bears serial characteristics itself. Such constructions also constitute the core of feminist conceptual art of the early 1970s, as the only exhibition displaying feminine conceptualists, titled *c. 7,500*, curated by Lucy Lippard in 1973 (Californian Institute for the Arts, Valencia), has shown. Numerous "motions" or "permutations" documented through serial photographs – such as Martha Wilson's *Breast Form Permutated*, Athena Tacha's *Expressions 1 (Study of Facial Motions)* or Ana Mendieta's *Untitled (Glass on Body Imprints – Face)* (all 1972, see Fig. 39) – not only echo the ascendance of chronophotography in a strictly formal manner, but re-enact its concepts, terminology (e.g., "motions") and programmatic approach.[24]

Numerous artists have theorized serial imagery as a sole concept, most prominently Mel Bochner. His text "The Serial Attitude," published in the December 1967 issue of *Artforum*, uses as its first argumentative example, in the second line of the text, "Edward Muybridge's photographs."[25] Clearly, the use of protocoled depiction plays a central role in his use of that particular example:

> *Serial ideas have occurred in numerous places and in various forms. Muybridge's photographs are an instance of the serialization of time through the systematic subtraction of duration from event. Muybridge simultaneously photographed the same activity from 180°, 90°, and 45° and printed the three sets of photographs parallel horizontally. By setting up alternative reading logics within a visually discontinuous sequence he completely fragmented perception into what Stockhausen called, in another context, a "directionless time-field."*[26]

While the concept of protocol itself is here emphasized, Bochner further insists on the improvements made by Etienne-Jules Marey. His camera based on Gatlin's machine gun could take 120 photographs a second and could, "by placing a clock within camera range, obtain [...] a remarkable 'dissociation of time and image.'"[27] While the Bechers'

24 The convergence of conceptual and feminist art has until recently hardly been studied, although a multitude of body typologies can be found in the 1970s in the work of feminist artists such as Ana Mendieta, Martha Wilson, Hannah Wilke, Annette Messager and Eleanor Antin. The role Lucy Lippard played in its enactment has recently undergone a new curatorial and historiographical impulse, as numerous exhibitions and publications attest. See especially Cornelia Butler et. al., *From Conceptualism to Feminism. Lucy Lippard's Numbers Shows 1969–74*, New York/London, Afterall Books, 2012 and Catherine Morris and Vincent Bonin (ed.), *Materializing Six Years. Lucy R. Lippard and the Emergence of Conceptual Art*, Cambridge (MA), MIT Press, 2012, which results from an exhibition at The Elizabeth A. Sackler Center for Feminist Art and which investigates Lippard's curatorial and editorial work before she explicitly engaged in feminist criticism around 1973. See also Jayne Wark, "Conceptual Art and Feminism. Martha Rosler, Adrian Piper, Eleanor Antin, and Martha Wilson," *Woman's Art Journal*, Vol. 22, No. 1, Spring-Summer 2001.

25 Mel Bochner, "*The Serial Attitude*," in Alexander Albero and Blake Stimson, *Conceptual Art. A Critical Anthology*, Cambridge (MA), MIT Press, 1999, p. 22. First published in *Artforum*, December 1967, p. 28 – 33. See also Mel Bochner, "Serial Art Systems. Solipsism," *Arts Magazine*, No. 41, Summer 1967.

26 Ibid., p. 23.

27 Ibid., p. 24.

typological images are submitted only to "one" protocol – the parameters defining the relationship between the object and its depiction – chronophotography also bears a transversal protocol: time. Bochner's emphasis on Marey's tool suggests that this particular aspect had to be controlled. Serial order had to be defined solely by an idea, and not be subordinate to a superior structure such as time, which could potentially undermine its existence: as time is infinite, there can only be continuity, which mathematically prohibits certain serial constructions.

Fig. 39: Ana Mendieta, *Untitled (Glass on Body Imprints – Face)*, 1972 (6 photographs, 20.3 × 25.4 cm each)

The importance of chronophotography in that period and its declination by numerous artists in the American context, shows to which extent its protocoled dimension, its subordination to a defined set of rules, proved appealing both conceptually and visually,[28] despite the anti-visual attitude of concept art. The illustration of "Paragraphs on Conceptual Art" (1967) with the photographs of a painter associated with pop art, Ed Ruscha – his work *Every Building on the Sunset Strip* is featured next to Eva Hesse, Sol LeWitt or Robert Morris – shows how the mechanical use of photography, submitted to a set protocol (in this case the depiction of any building on one particular street, automatically shooting with a camera mounted on a driving car)[29] and connected to vernacular subjects, ought to polarize the interest for the medium by conceptual artists. As photography was at the time associated with mass media rather than art, it embodied an ideal

28 Among artists, only relatively few critical voices questioned Muybridge's importance and relevance at the time. The most famous was experimental filmmaker and photographer Hollis Frampton, who realized with Marion Faller various studies on *Vegetable Locomotion* (1975), explicitly making fun of Muybridge's *Animal Locomotion*. His famous essay published in *Artforum* in March 1973 focuses on Muybridge's impulses, which led him to shoot (and kill) his wife's lover and whose "obsession [...] drove him [...] to make [sequences] by thousands." See Hollis Frampton, "Eadweard Muybridge. Fragments of Tesseract," *Artforum*, No. 11, Vol. 7, March 1973, p. 51 – 52.

29 Sylvia Wolf, *Ed Ruscha and Photography*, exhibition catalogue (Whitney Museum of American Art, New York, 2004), Göttingen, Steidl, 2004, p. 139 – 40.

documentational and experimental tool. Its use by American artists also had European equivalents, despite the fact that they were not necessarily acknowledged in the United States at that time.

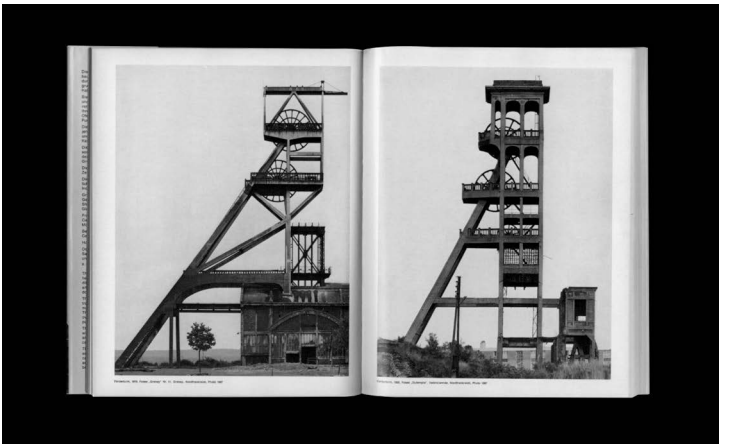

Fig. 40: Bernhard and Hilla Becher, *Anonyme Skulpturen*, Düsseldorf, Art-Press Verlag, 1970, double-image layout (image from *Bernhard und Hilla Becher. Ephemera and catalogues*, edited by Antoine de Beaupré, Paris, Galerie 213, 2010)

In his *Bilder* series (1968 – 1976), the Düsseldorf born "photographer"[30] Hans-Peter Feldmann assembled cheap, unsigned and unnumbered little books with vernacular imagery. He predetermined the number of images, which provided the generic title of every book – *11 Bilder* shows eleven sets of women's knees; *1 Bild* a zeppelin.[31] The images in *3 Bilder* are replaced by description, enacting a similar strategy.[32] One of the first acknowledgements of that proximity is yet again displayed in Volker Kahmen's *Fotografie als Kunst* which, in the illustration section, establishes a body of work based on serial imagery. He confronts Feldmann with Ruscha, Bruce Nauman, August Sander, the Bechers, Eadweard Muybridge or Jan Dibbets,[33] reflecting on the impact of protocols (frontal construction and serial configuration) and their (supposedly) trans-historical expression. As chronophotography as pervasive model seemingly structures all subsequent visual patterns, the impact of its protocoled depiction on ensuing imagery ought to be further defined in order to understand a yet to be developed strategy of the young generation of Düsseldorf photographers, the "single-image typology" (see p. 328 and following).

30 Trained as a painter and mostly using appropriated material, Feldmann challenges the very notion of photography, which remains his primary medium in the 1960s and 1970s.

31 Or a coat, as *1 Bild* exists in two versions.

32 See Hans-Peter Feldmann, *Bilder. Pictures*, Cologne, 3 Möven Verlag and Verlag der Buchhandlung Walther König, 2002 (1975).

33 Volker Kahmen, *Fotografie als Kunst*, op. cit., p. 204 – 224.

2 SERIAL CONSTRUCTIONS, GRIDS AND REPETITIVE PATTERNS

Serial constructions in conceptual photography, recorded feminist body permutations, Ed Ruscha's bookwork[34] and Bernd and Hilla Becher's photographs, are predominantly expressed in two sometimes combined forms: the typological grid and the book. The grid can be visible in exhibition displays, juxtaposing and confronting discrete images. Its comparative mechanisms are primarily visible through a large superordinate image, based on several smaller ones. The book as a serial medium operates in a linear temporality, combining photographs in sequences. Their combinatory interrelations are in the first case activated by browsing through the pages, and not by the selective action of the eye looking at one image. Grid patterns can also be rendered through specific layouts. The comparative mechanism can be operative in one single page (i.e., as a typology), but can also work by "continuously" confronting single images on opposite pages, "forcing comparative study."[35] The publishing in 1970 of the Bechers' *Anonyme Skulpturen* by the Düsseldorf-based Art-Press Verlag (Fig. 40) was the first opportunity for the couple to design a book the way they imagined it, as many publishers who had approached them would not let them choose formats or image presentation.[36] The outcome of the collaboration – the modes of presentation and the concept of anonymous sculptures it conveys –, is commonly interpreted as their most important statement to date, and it remains one of the key moments of their history.[37] These serial forms in publishing and editing have played a key role in conceptual art and photo-conceptualism as well. LeWitt's, Bochner's and Feldmann's bookwork – explicit answers to the "institutional critique" their strategies embody[38] – constitutes an important or even predominant aspect of their respective oeuvres and is the chief expression of serial mechanisms. But books as autonomous artistic works play a rather minor role in the Bechers' and their

34 For the original use and definition of the concept of the book *as an artwork* (bookwork), see Ulises Carríon, "Bookworks Revisited," in *Second Thoughts*, Amsterdam, VOID Distributors, 1980 and Clive Phillpot, "Books, Bookworks, Book objects, Artists' Book," *Artforum*, Vol. 20, No. 9, May 1982. For a history of the terminology used to describe artists' books, see Duncan Chappell, "Typologising the artist's book," *Art Libraries Journal*, Vol. 4, No. 28, 2003.

35 Chris Balaschak, "Between Sequence and Seriality. Landscape Photography and Its Historiography in Anonyme Skulpturen," op. cit., p. 27.

36 The publication was preceded by the journal *Kunst Zeitung*, No. 2, 1969 also titled "Anonyme Skulpturen" and realized by Eugen Michel (Michelpresse), which was distributed at Art Cologne. See Hilla Becher, interview by Chris Balaschak, August 19, 2008, quoted in Chris Balaschak, "Between Sequence and Seriality. Landscape Photography and its Historiography in Anonyme Skulpturen," op. cit.

37 Chris Balaschak, "Between Sequence and Seriality. Landscape Photography and Its Historiography in Anonyme Skulpturen," op. cit., p. 25 – 27.

38 See especially Benjamin Buchloh, "Conceptual Art 1962 – 1969. From the Aesthetic of Administration to the Critique of Institution," *October*, Vol. 55, Winter 1990.

students' photography, except in Jörg Sasse's work.[39] Their photographic practice is dominated by single images or tableaus displayed in real space, either groups of images constituting a whole (e.g., the Bechers' typological constructions), unique photographs (e.g., most of Andreas Gursky's images) or unique photographs hung next to each other as a series (e.g., Thomas Ruff's small *Porträts*).

Fig. 41: Double row typology (Munich, 1967)

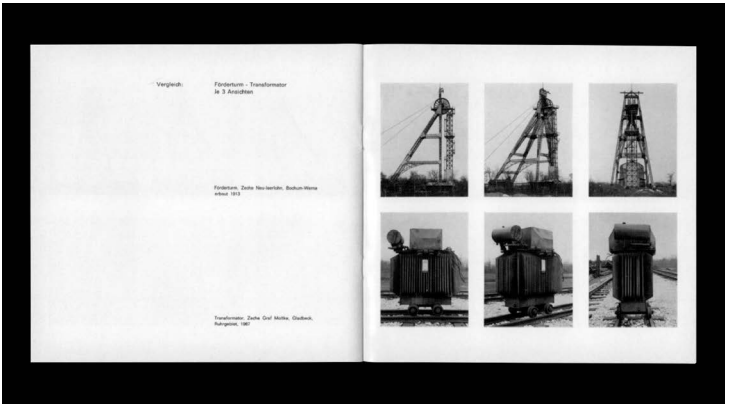

Fig. 42: "Fake" typology, Aachen, 1971 (source: de Beaupré)

39 The rarity of bookwork in the Düsseldorf context ought to be mentioned. The Portikus edition of Andreas Gursky's *Paris, Montparnasse* constitutes his only artist's book, although he did contribute to the design of some editorial projects, such as the recent *Andreas Gursky. Bangkok* edited by Steidl in 2012. However, none of Thomas Ruff's books can be considered an artist's book. See *Andreas Gursky. Montparnasse*, exhibition catalogue (Portikus, Frankfurt, 1995), Stuttgart, Oktagon Verlag, 1995 and *Andreas Gursky. Bangkok*, exhibition catalogue (Museum Kunstpalast), Düsseldorf, 2012, Göttingen, Steidl, 2012.

In order to understand the position of the younger generation toward serial constructions, the strategy of the Bechers ought to be recapitulated, as considerable differences emerged in that respect. As Martina Dobbe has comprehensively shown, typology as "visual grammar" develops at a very early stage of the Bechers' collaboration, not long after Bernd Becher was still experimenting with collage as a combinatory form.[40] In their first solo exhibition in the Galerie Nohl in 1963 in Siegen, the couple already showed double rows of individual images, similar to their "Industriebauten 1830 – 1930" in 1967 (see Fig. 41). These compositions would rapidly evolve into the superposition of three rows with three photographs each to produce a square comparative project with nine images. These multiple displays would eventually lead to the merging of variable numbers of single images (9, 12, etc.) into "tableaus," perceived as one whole.[41] The typological and comparative character of these image groups or tableaus eventually underwent structural changes itself, as "real typologies" articulating comparable objects such as half-timbered houses from the Siegenerland evolved into a composite model, as is exemplified in the multitude of houses of "typological" projects such as *Fachwerkhäuser Südwestdeutschland* (1990) or *Vergleiche technischer Konstruktionen* (Aachen, 1971, see Fig. 42). The depicted objects are not grouped into a grid in order to be compared – the houses of the *same* region probably constitute the most evident manifestation of that pattern –, but various elements are inserted into the pre-existing grid. Various exhibitions and publications, such as *Vergleiche technischer Konstruktionen* in 1971 (Comparisons of technical constructions),[42] follows that "false" typological pattern: the coal silos and the cooling towers of *Kohlesilo und Kühlturm, je 3 Ansichten* (1971) are articulated less because of a classificatory need – for an engineer or an architect there is no point in comparing these types – and more to confront the viewer with their visual character, exemplifying the shift between "anonymous architecture" and "anonymous sculpture."[43] Some projects even multiply typologies, as in the La Jolla exhibition catalogue (1974), in which four specific types of concrete water towers are compared (see Fig. 43).[44] The comparative mechanism itself, the articulation of discrete image and whole, gains in importance, a phenomenon that has undoubtedly contributed to their acceptance by conceptual artists, particularly in the United States. But these processes, stripped from a strictly comparative or typological character, will also considerably shape the work of the Bechers' students, as will be argued below.

40 Martina Dobbe, *Bernd und Hilla Becher. Fachwerkhäuser*, Siegen, Museum für Gegenwartskunst Siegen, 2013 (2001), p. 39 – 41.

41 Ibid., p. 41.

42 *Bernhard und Hilla Becher. Vergleich technischer Konstruktionen*, exhibition catalogue (Zentrum für aktuelle Kunst, Aachen, 4 – 26 March 1971), Aachen, Gegenverkehr e.V. Zentrum für aktuelle Kunst, 1971.

43 One might even argue that they stand as "anonymous images."

44 See *Bernd and Hilla Becher*, exhibition catalogue, La Jolla (California), La Jolla Museum of Contemporary Art, 1974. This was the first Becher catalogue published by a museum in the United States. See Antoine de Beaupré (ed.), *Bernhard und Hilla Becher. Ephemera and catalogues*, Paris, Galerie 213, 2010.

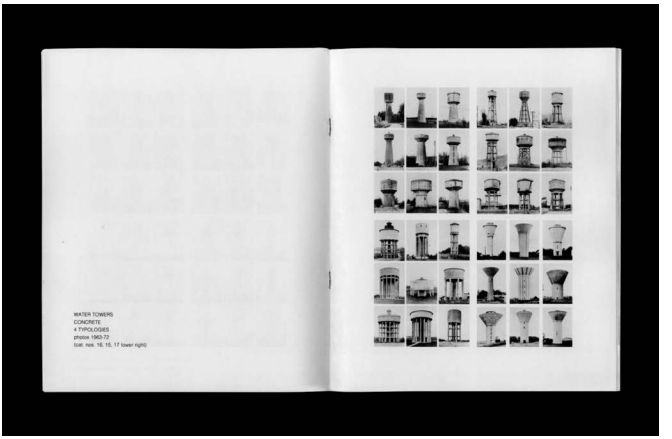

Fig. 43: Multiplied typology, La Jolla, 1974 (source: de Beaupré)

In these typologies, a similar process as in the previously mentioned project *Brick Wall* (1967) by Sol LeWitt occurs. In the midst of a group of images, every single photograph increasingly appears as an autonomous image freed from its referent, rather than a depiction; the frontal, two-dimensional, graphically pregnant construction creates a correspondence between the depicted reality (i.e., the brick wall, the silos, etc.) and the image, which enforces the visual [bildlich] against the depictive [abbildlich] effect.[45] The serial order plays a fundamental role in that process, as the individual picture remains attached to what it depicts if displayed separately. A key structure appears through the autonomization of the single image deriving from its inscription in a typological frame, one which as subject, concept and shape has played a central role in conceptual art, although its name is hardly ever mentioned: the grid. In Alexander Albero and Blake Stimson's six hundred page anthology of texts associated with conceptual art published between 1966 and the 1990s, which gathers most of the important writings of its key proponents and critics, the word only appears three times.[46] Mel Bochner's "The Serial Attitude" evokes "parallels of latitude, isobars, isothermal lines and other grid coordinate denotations, all serialized, [which] are further cases of the application of external structure systems [that] order the unordered."[47] Robert Smithson argues, when criticizing institutionalized art

45 The paroxysm of this movement from depiction toward image, which we lay out schematically for the sake of argumentation, would appear in the appropriation work of Richard Prince or Sherrie Levine in the late 1970s, based on photographs of pre-existing photographs. In their work, the object of depiction *is* an image, which creates a perfect correspondence. On a theoretical level, that shift could be read with Jean Baudrillard's concept of simulacrum, which states that knowledge is no longer based on our perception of reality, but through the apprehension of the "signs of the real," which have substituted the latter. See Jean Baudrillard, *Simulacra and Simulation*, op. cit., p. 4.

46 If one excludes Benjamin Buchloh's retrospective article establishing the concept of institutional critique in 1990.

47 Mel Bochner, "*The Serial Attitude*," in Alexander Albero and Blake Stimson (ed.), *Conceptual Art. A Critical Anthology*, op. cit., p. 27.

in general and figurative art in particular, that "a face or a grid on a canvas is still a representation."[48] Finally, Benjamin Buchloh addresses in an early text from 1978 the specific character of the layout of Dan Graham's magazine project *Homes for America* (1966) in relation to photography and text.[49] But despite its rather scarce mention or theorization, the grid is omnipresent in conceptual and photo-conceptual work of the time, as both compositional structure and as subject. Numerous typologies and comparative projects of Sol LeWitt, Mel Bochner and the mentioned feminist permutations depend upon that model, as much in photography (e.g., Bochner's *Crumble*, 1967) as in drawing and in sculpture (e.g., LeWitt's structures). Various book projects, which are often displayed also as one-page layouts, such as Ed Ruscha's *A Few Palm Trees* (1971) or Marcel Broodthaers' *Atlas* (1975), further enact the model based on a grid. Similar to the *Fachwerkhäuser*, the grid also pervades *inside* single images, even becoming in Sol LeWitt's photographic work an investigation of grid structures in real life.[50] Sol LeWitt was searching for grids, serial structures or organizational systems in vernacular expressions and in high culture manifestations: his interest for great architectural achievements are echoed in his pictures of grid structures embedded in Florence's illustrious St. Maria del Fiore Basilica which, in the photographic depiction found in *Photogrids* (1977 – 1978), intriguingly resonate with the cover of *Camera* 12 (1967),[51] addressing the relationship between photography and architecture. But despite the prevalence of grid structures throughout that period, the scarce mention of the term seems to indicate that as such, its implications were not necessarily investigated or considered worthy of examination.

48 Robert Smithson, "Cultural Confinement," in Alexander Albero and Blake Stimson (ed.), *Conceptual Art. A Critical Anthology*, op. cit., p. 281.

49 Benjamin Buchloh, "Moments of History in the Work of Dan Graham," in Alexander Albero and Blake Stimson (ed.), *Conceptual Art. A Critical Anthology*, op. cit., p. 377. First published in Benjamin Buchloh, "Moments of History in the Work of Dan Graham," in *Dan Graham. Articles*, Eindhoven, Van Abbemuseum, 1978.

50 That grid layout (2×2, 3×3 or 4×4) can be found in various projects such as *Four Basic Kinds of Lines and Color* (1971), his contribution to the *Xerox Book* (1968), *From Monteluco to Spoleto* (1976), *Photogrids* (1977 – 1978), *Sunrise and Sunset at Praiano* (1980) or *Autobiography* (1980). See for example Giorgio Maffei and Emanuele De Donno, *Sol LeWitt. Artist's Books*, Sant'Eraclio di Foligno, Viaindustriae, 2009.

51 This special issue of *Camera* entitled "Panoptique. Architecture et photographie," which Allan Porter considered "one of the most important of his life" (Nadine Olonetzky, *Ein Amerikaner in Luzern. Allan Porter und <camera> eine Biografie*, op. cit., p. 78 – 79), addressed the "wrong" perception of architecture through photography in terms of scale or three dimensionality, thus addressing the articulation of image and depiction. It combined photographs of important buildings (the Karnak Temple in Egypt, Le Corbusier's chapel in Ronchamp, Notre-Dame de Paris, etc.) with their blueprints on transparent paper, all at the same scale, aiming at providing a rigorous comparative approach (see Allan Porter, "Panoptique. Architecture et photographie," *Camera*, No. 12, December 1967, p. 5). Although there is no clue that Sol LeWitt actually saw this issue, it nevertheless interestingly reveals a convergence of interest, as depictions of geometrical patterns of reality (e.g., architecture) and alternative models of representation (e.g., maps or aerial photography) played an important role in his work.

3 ROSALIND KRAUSS AND THE GRID

Despite the omnipresence of grid structures in the visual production of the late 1960s and the early 1970s, the structure itself has not been theorized as it could be expected. The historical models of serial imagery (e.g., chronophotography or serial painting) and its various formal and conceptual declinations (e.g., sequences, typologies, permutations, etc.) have been addressed on a theoretical and practical level by numerous artists, discussing the role of time in its serial articulation (e.g., Mel Bochner) or examining the processual features of serial imagery (e.g., Sol LeWitt). The art historian John Coplans' early study *Serial Imagery* (1968) primarily discusses serial mechanisms built upon multiple images, considering the series or the sequence throughout various paintings of the same artist. Even though some examples are shown *as a grid* in the book, as for example Andy Warhol's 1964 *Liz Taylor* series (four images on each page, p. 134–135), Coplans does not address its structural specificities. The grid as underlying structure of such compositions has been extensively neglected as an autonomous concept, as the rare mentions of the term itself attest. It is only in 1979 that a text primarily addressing modern painting confronts what seems to be a defining component of conceptual art, the Bechers' photography and their students' work. In the summer 1979 issue of *October*, Rosalind Krauss publishes an article entitled "Grids,"[52] which constitutes the first attempt to circumscribe that particular notion in the context of the visual arts. The text was written a couple of years after the historical decade of conceptual art – Alexander Albero situates the period between 1966 and 1977[53] –, and it discusses the grid in exclusively non-photographic arts, primarily through painting (e.g., Agnes Martin's radical approach to grids), and to a certain extent sculpture, from the early twentieth century to the 1970s. Krauss' aim is to evaluate the relevancy of the grid in modern art, following its appearance in early twentieth-century painting, after which it "remained emblematic of the modernist ambition within the visual arts."[54] According to Krauss, the grid constitutes a key mechanism of modernist visual production because of its distancing from what she calls speech that can however to a certain extent be associated with the concept of mimesis:

> *Surfacing in pre-war cubist painting and subsequently becoming ever more stringent and manifest, the grid announces, among other things, modern art's will to silence, its hostility to literature, to narrative, to discourse. As such, the grid has done its job with striking efficiency. The barrier it has lowered between the arts of vision and those of language has been almost totally successful in walling the visual arts into a realm of exclusive visuality and defending them against the intrusion of speech.*[55]

52 Rosalind Krauss, "Grids," *Artforum*, Vol. 9, Summer 1979.
53 Alexander Albero, "Reconsidering Conceptual Art, 1966–1977," op. cit.
54 Rosalind Krauss, "Grids," op. cit., p. 50.
55 Ibid.

The distance from language and depiction – in the context of conceptual art, photographic depiction would be logically correlated with language – leads Krauss to claim that the grid constitutes an "antinatural, antimimetic, antireal"[56] structure which, in the context of modernist painting "declares the space of art to be at once autonomous and autotelic."[57] Her radical claim of autonomy and "withdrawal"[58] from reality and, in a paradigmatically postmodernist position, from history itself,[59] won't be endorsed or discussed as such here. The extremely complex context of emergence of the article and of Krauss' thought more generally, which both refutes Greenbergian formalism and medium specificity, and her nascent confrontation with the photographic, shall not be pursued either.[60] Rather, we aim to use her concept in order to highlight the specific context of the emergence of grids and serial forms, which her text could be symptomatic of.

A surprising characteristic of "Grids," which hardly mentions photography, lies in the theoretical and conceptual model it provides for understanding the prevalence of grid systems in the 1960s and 1970s. If we go back to the example of Sol LeWitt's *Four Basic Kinds of Straight Lines and Their Combination* (1969, Fig. 34), we can easily conclude that the drawing would correspond to Krauss' idea of an autotelic structure. The drawings express a predefined protocol – in this case the combination of four types of straight lines –, which does not have an existence outside the concept itself and its visual evidence. *Brick Wall* (1967), on the other hand, while exemplifying a similar strategy, retains a connection with what it depicts. As such, the grid can be seen as a structure operating between the object being depicted and the depiction. The comparison of these two differing visual outputs of a protocol does not aim to approach or differentiate drawing or photography ontologically, or to define an alleged medium specificity. Rather, it aims to address a systematization of depictive processes, which could be interpreted as the subsequent output of mechanization in industrial societies.[61] But although a changing epistemological context will be addressed, only the shifting modalities of photographic depiction shall be analyzed, limiting the scope of the analysis. From a photographic perspective, the use of grids appears central to the reconfiguration of mechanical representation, as the depicted reality is systematically – at least in the work of the Bechers – demarcated and geometrically oriented by grid systems. The rigorous Becher protocol,

56 Ibid.

57 Ibid., p. 52.

58 Ibid.

59 Ibid., p. 64. In a recent study on the grid, Eric de Chassey stresses the rupture of the modernist grid *in* history, rather than *with* history. See Eric de Chassey, "Après la grille," in Bernard Ceysson (ed.), *Abstraction/Abstractions – Géométrie provisoire*, exhibition catalogue, Saint-Étienne, Musée d'Art Moderne de St. Étienne, 1997 and François Bouchon, *Grille et complexité. Analyse de l'entrecroisement régulier de lignes dans l'histoire de l'art*, doctoral thesis (unpublished), University of St. Etienne, 2011, p. 15 – 16.

60 For a synthesis of these debates, see for example Johanne Lamoureux, "La critique postmoderne et le modèle photographique," *Etudes photographiques*, No. 1, November 1996.

61 See Sigfried Giedion, *Mechanization Takes Command. A Contribution to Anonymous History*, New York, Oxford University Press, 1970 (1947) and Lev Manovich, *Software Takes Command*, New York, Bloomsbury, 2013, introduction.

as well as numerous typological and serial compositions (e.g., Hans Peter Feldmann's 152 Bilder, 1971), both systematize the reproductive process, while enhancing the perception of photographs as images. In the case of Feldmann, the grid not only prohibits the potential transparency of the single photograph by juxtaposing it with many others. It further inscribes every portrait in a cultural history of such representational forms, comparison and repetition making the reference less fortuitous. In that particular example, the comparative displays or typological arrangement of an iconography that could be associated with family photography suggests a political context instead: the grids suggest Red Army Faction (RAF) wanted lists or – in a much more distant genealogy – anthropometry as a remote formal predecessor.

Although Krauss' text explicitly defines the grid against perspectival representations and mimetic forms, numerous analytical criteria corroborate a reading that is productive for the understanding of the grid in photography. Addressing the dispute on the centripetal or centrifugal nature of visual arts (i.e., the question whether a painting exceeds the limits of the frame or not), she argues that:

> *I have witnessed and participated in arguments about whether the grid portends the centrifugal or centripetal existence of the work of art. Logically speaking, the grid extends, in all directions, to infinity. Any boundaries imposed upon it by a given painting or sculpture can only be seen – according to this logic – as arbitrary.*[62]

That framework, in the context of typologies and frontal photography, for example, supports Andreas Gursky's strategy. *Paris, Montparnasse* (1993) not only extends the architectural reality by digital means, sewing two photographs together horizontally; it also suggests that extension by leaving the building continue above the limits of the picture, whose physical existence – the print is 350 centimeters wide – also reflects a search for a centripetal effect. The relevance of Krauss' model, not as a specific mechanism of modernist painting but as a conceptual framework addressing the systematization of depiction and its epistemological implications, can be demonstrated through confrontation of the model with the use of grid structures and raster grids in Düsseldorf photography, and through the model's connection with the photographic protocol.

62 Rosalind Krauss, "Grids," op. cit., p. 60.

B SERIAL CONSTRUCTIONS AND COMBINATORIAL FUNCTIONS: A TRANS-HISTORICAL PATTERN

1 THE BECHER PROTOCOL

Bernd and Hilla Becher's *Fachwerkhäuser* series exemplifies the core articulation of the couple's typological endeavor. The series' specific formal features and their differentiation from most photographs of industrial buildings – the presence of grids *within* the image and the geometrical equivalence of the façades with the surface of the photograph – exemplifies their formal and conceptual strategy through the rigorous application of their protocol. Martina Dobbe, who has exhaustively studied this "ideal" form of the Becher typology, shows how building and depiction mutually influence each other. Commenting on one of the earliest occurrences of the couple's common work[63] – *Rensdorfstr. 5, Salchendorf*, 1959 (Fig. 44) –, she notes that while "the façade seems to be inscribed into the grid of the camera's viewfinder," the structure of the building itself is reinforced by the strict and geometrical photographic depiction.[64] The relationship between depicted subject and apparatus, induced by the protocol, thus emerges at the very onset of their visual production. This "Urform" of their typological work already bears the full extent of a predefined set of rules, invariably applied throughout half a century, which can be understood as a paragon for protocols in photography. Technically, it can be defined by various parameters, all of which pursue a specific purpose. The Bechers use large-format cameras, often

63 The couple met in 1959.
64 Martina Dobbe, *Bernd und Hilla Becher. Fachwerkhäuser*, op. cit., p. 9.

with zoom lenses, in order to provide images with a good resolution. Their infinite amount of fine tuning (plane shifting between lens and film, etc.) further allows for control over perspectival distortions and for the avoidance of any out of focus area. A transparent and verisimilar depiction constitutes a paramount formal precondition for a "documentary" claim. The buildings are mostly photographed frontally, from a low or high point of view, and are always shown in a flat manner, "filling" the images with always similar type forms. While the approach to photographing *Fachwerkhäuser* is invariably the same in terms of perspective and camera angle, some constructions (especially large factories with differing shapes) are depicted in various scales and with varying camera angles, in order to provide comparable objects. The *Kalköfen* taken between 1964 and 1997 for example, vary considerably in size, but the protocoled depiction (high and low camera angles, various sizes condensed into similar shapes, etc.) merges them into comparable images.[65] Light conditions are as neutral as possible – images are mostly taken in winter or spring in early morning –, avoiding high contrasts or shadows and guaranteeing that the gray scales are as linear as possible.[66] More generally, every contextual element is removed from the picture. The buildings depicted fill the frames of the photographs almost entirely. The scarce patches of sky and ground around them provide little contextual information. There is no visible vegetation and hardly any cars or people, which produces an extreme geographical, temporal and cultural decontextualization: hardly any clues allow dating the photographs or associating them with any particular country or region.

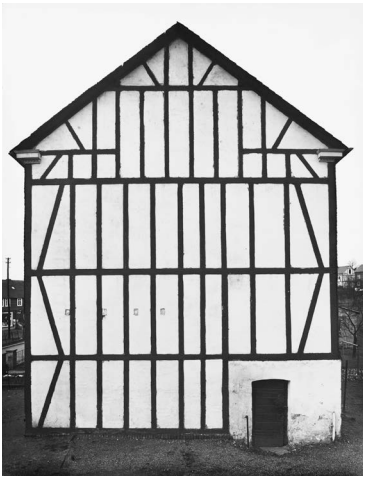

Fig. 44: Bernd and Hilla Becher, *Rensdorfstr. 5, Salchendorf*, 1959 (b/w, 40 × 50 cm)

65 Carl Andre had described the phenomenon in 1972 already. See Carl Andre, "A Note on Bernhard and Hilla Becher," *Artforum*, Vol. 11, No. 4, December 1972 (issue edited by John Coplans). Reprinted in James Meyer (ed.), *Carl Andre. Cuts. Texts 1959 – 2004*, Cambridge (MA), MIT Press, 2005, p. 65 – 66.

66 Rolf Sachsse, quoted by Martina Dobbe, op. cit., p. 11.

The rigorous declination of the Becher protocol, combined with the implications of the typological display of the photographs merged into multiple-image tableaus, provides a model that will have a considerable influence on the visual production of the young generation of photographers of the Kunstakademie Düsseldorf. However, the Bechers' paradigmatic comparative mechanism, the typological display, does not exist as such in their students' work. However, the notion of series as a gathering of thematically similar images endures. Thomas Struth's jungles or Andreas Gursky's globalized architecture constitute subjects both photographers have pursued over long periods of time. Although thematically similar, single images of the series are not intended to be visually comparable with one another. On the other hand, Thomas Ruff's small-format *Porträts*, commonly hung next to each other horizontally in displays of five to twenty images, in one or two rows, are among the few examples that seemingly reproduce a comparative mode similar to the Bechers' typologies. The display of Jörg Sasse's *Speicher* series – a horizontal set of single images (see Fig. 107) – works similarly. The numerous color backgrounds of the early *Porträts* and the variable camera angles (frontal and diagonal), or the formal variety in Sasse's case, prohibit a similar comparison effect as in the Bechers' work. Their display never produces a unique, coherent tableau: the association doesn't span above two or three images the viewer looks at while moving along the exhibition. The perception of the large format *Porträts* proceeds similarly, as only a few can be compared from a distance, considering the large size of the prints.

Fig. 45: Thomas Ruff, *Zeitungsfoto 351*, 1991 (b/w, detail)

As it seems, the legacy of the Bechers primarily resides in the protocoled depiction, rather than in comparative mechanisms. All Becher students have adopted their teacher's geometrical approach to the depicted objects (with orthogonal or 45-degree angles), working predominantly with frontal compositions in a very controlled representational space. As in architecture photography, every line is adapted to geometrically correspond to the light-sensitive surface of the large-format

camera in order to build a plane surface coinciding with the produced image. The two-dimensional contingency of the photographic apparatus spans to the choice of the frame and the object, in order to produce "two" analogue plane surfaces. Much as the grid system of the *Fachwerkhäuser* matching the camera's viewfinder, Düsseldorf photography subordinates the produced photographs to the depictive medium. As pointed out earlier, even organic subjects, such as the plants in Thomas Struth's *Paradise* series (see Fig. 109), reveal an underlying structuring grid, which decomposes the image into geometrical patterns: although a three-dimensional forest is depicted, the numerous leaves blend into planar surfaces. The often reflected upon concept of "surface without depth" – for example, the two-dimensional character of Thomas Ruff's portraits – yields productive interpretative angles, but it does not fully reflect the underlying processes of these formal developments. The Becher protocol and the single-image autonomization process, the consequence of typological constructions, constitute another prism through which to address the formal construction of Düsseldorf photography. Its formal outcome, the raster grid, constitutes the underlying structure most produced images rely upon. But if that grid remains central, it operates primarily by structuring single images and not – as in the Bechers' – multiple-image systems. A distinctive feature of young Düsseldorf photography thus resides in the importing of a multiple-image architecture into single photographs that inherit the single-image autonomization – a process which dissociates image from depiction – from their typological "counterpart."

Grids and grid levels

Thomas Ruff's *Zeitungsfoto 351* (1991, Fig. 45) constitutes one of the few examples of a unique image in the Becher students' work, which integrates a typology (if one considers the first images of the series) or a sequential construction based on time (if one considers all sixteen). His photograph of pictures of bicycle riders pinned on a wall[67] is one of the rare occurrences of an image with a comparative grid structure with multiple photographs. Its loose formal construction – the camera angle is not orthogonal and the grid does not correspond to the surface of the photograph – almost ironically comments upon serial imagery and its use by photo-conceptualists.[68] Save for a few examples, the main difference of the Becher students resides in their investment of the single image, or single image systems. But within these single photographs, a multiple-image structure can be found, on various levels. Andreas Gursky's *Paris, Montparnasse* (1993), for example, is formally based on a grid structure which, as Peter Galassi pointed out, is reminiscent of grid patterns found in American abstract

67 The photograph is reminiscent of Hans-Peter Feldmann's book *9 Bilder* (1971), based on bicycle riders.

68 Ruff's *Zeitungsfotos* provide visual models for his photography but also address photography in a self-reflexive stance, commenting upon the medium itself. See below, chapter "Thomas Ruff's *Häuser* series." The complete series is featured in a publication initiated by Christoph Schifferli and Lex Trueb, *Thomas Ruff. Zeitungsfotos/Newspaper Photographs*, Zurich, Bookhorse, 2014.

expressionist models or non-figurative paintings by Gerhard Richter, such as *1024 Colors* (1973).[69] But if we consider the abundant images of apartments (i.e., Fig. 76), geometrically arranged around the orthogonal architecture of the façade, we are confronted with the same formal construction as the Bechers' tableaus, where comparable elements are multiplied and opposed. In this case the discrete elements can easily be associated with autonomous images – every apartment is defined by a square frame, which produces an evident analogy between the interior view and a photographic image. But that grid structure varies considerably across Düsseldorf photography, and such an evident correspondence is not always possible. In many architectural images, such as Thomas Ruff's *Haus Nr. 5 I* (1988, Fig. 46), the discrete component corresponds to a part of a building, in this case one concrete panel with one window. But the meshes of the grid are often tightened considerably, sometimes leaving only minuscule elements as distinct components. In Andreas Gursky's *Pyongyang I*, the smallest denominator is a gymnast with a colored board; in his *Untitled I* (1993), the nominal element is a knot of the carpet of a Düsseldorf museum.

Fig. 46: Thomas Ruff, *Haus Nr. 5 I*, 1988 (216 × 208 cm)

If Thomas Ruff's *Haus Nr. 5 I* (Fig. 46) enacts the formal construction based on the association of discrete elements *within* the single image, its comparison with the Bechers' *Kühlturm, Stahlwerk*, *Ebbw Vale*, *Südwales* (1966, Fig. 47) reveals a second level of grids, present within the Bechers' *single* image as well. As previously mentioned, the grid is overt at various levels in their work, most obviously in the *Fachwerkhäuser*. It also appears at that time on different levels in the work of photo-conceptualists, as well as in non-photographic forms. Chuck Close's photorealist paintings or drawings are based on a structuring grid that remains invisible in his 1960s and 1970s hyperrealist paintings

69 Peter Galassi, "*Gursky's World*," op. cit., p. 31 – 32.

but that gradually appears in his later work.[70] Several photographic works and sketches already show the decomposing grid before it becomes a prevalent formal strategy (e.g., Fig. 48). Sol LeWitt depicts physical grids or reveals grid-like structures in architectural elements. Gerhard Richter focuses on the picture elements themselves, producing a series of color field paintings (*Farbfelder*) whose genesis can be followed through the drafts found in his *Atlas* (see Fig. 49).[71] His study of colors echoes categorization systems such as Pantone (created in 1866) or RAL[72] (created in 1927), and thus addresses the image as a rationalized codifying apparatus based on discrete elements. Although made in the mid-1970s, it is clearly reminiscent of a pixelated image for a contemporary viewer, a decade before the first mainstream computers were built.[73] Those experiments can all be inscribed in an implicit attempt to reflect upon the mechanical depiction of the world and its nascent digitization, and can be paralleled with the geometrically rigorous Becher protocol.

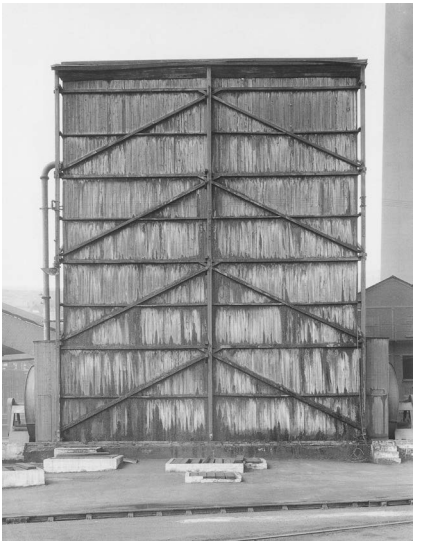

Fig. 47: Bernd and Hilla Becher, *Kühlturm, Stahlwerk, Ebbw Vale, Südwales*, 1966 (b/w)

70 Chuck Close's recent woven photorealist series (e.g., *Kate*, 2007, Jacquard Tapestry) echoes Gursky's reduction of his raster grid into wool knots.

71 Panels 272 – 286 and 292 – 296. See Helmut Friedel (ed.), *Gerhard Richter. Atlas*, Cologne, Verlag der Buchhandlung Walter König, 2011 (2006).

72 RAL (acronym for *Reichsausschuss für Lieferbedingungen*) was developed in order to rationalize industrial production. See for example www.ral-farben.de, accessed on June 13, 2018.

73 The mosaic of the south transept of the Cologne cathedral based on the *Farbfelder* (2007) even pushes further the analogy, as the "pixels" are backlit, much like a screen. See http://www.gerhard-richter.com/art/paintings /other/detail.php?paintid=14890&tab-artwork=notes, accessed on May 8, 2014 and Helmut Friedel (ed.), *Gerhard Richter. Atlas*, op. cit., panels 755 – 756.

Fig. 48: Chuck Close, *Self-Portrait, 9 parts*, 1978 (polaroids)

The ultimate reduction of that grid, mostly apparent in Thomas Ruff's late 1990s work with digital compression technologies, is manifested by the irreducible element of every digital imaging system: the pixel. In Ruff's *jpeg* series, the smallest formal component tallies with technological contingencies, which in the large-format prints are blown up to considerable proportions. While revealing a grid on another level – a kind of mega-pixel, the outcome of the compression algorithm (see Fig. 124) –, Ruff addresses the photograph in the context of its circulation on the web and questions the jpeg as a format central to that circulation. By revealing its architecture, Ruff focuses primarily on the image as an autonomous object and not a depiction of something. The *jpegs* address the re-presentation or depiction of pre-existing images whose references are not to be found in the physical world but in our visual culture. In this particular case, the use of a grid as an underlying structure serves Ruff's interrogation of the (supposed) evidentiary power of photography and the gradual shift from a direct connection with the world to a condition defined by an interrelation between the viewer and the depiction of the world. Ultimately, all these projects stress the visual nature of the images themselves. Their geometrical formalization emphasizes the nature of their referent: as the confrontation of Chuck Close's *Big Self-Portrait* and *Study for Big Self-Portrait* shows, the primary source of these images are images, which seemingly inscribes them in a new paradigm. They are not mimetic (at least they do not depict physical reality), they are not autotelic; they embody an alternative status. And in that respect, Krauss' model proves productive. Although she theorizes mimetic visual forms *against* autonomous grid structures, her concept allows for an apprehension of a context she wasn't explicitly addressing. The merging of mimetic capabilities of mechanical reproduction with the grid as an autonomous model hints at a visual reconfiguration in which images constitute the primary entities mediating reality.

2 IMAGE DECONSTRUCTION AS ARCHAEOLOGY OF COMPUTATION

Numerous previously discussed conceptual works entail a systematic declension of a pre-determined function, form or concept. The conceptualization of such processes translates the aspiration to understand and formalize an idea systematically, exploring all possibilities of the transcription of a given precondition. Sol LeWitt's numerous open cube variations aim to visually transpose all possibilities of a given system; these possibilities are mathematically defined – and arithmetically limited – as such systems are either intrinsically (e.g., every variation of an open cube viewed from a set angle and displayed on a paper sheet, see Fig. 50) or artificially (e.g., a picture of every building on the Sunset Strip) determined by the possible variations. But within the set rules, the proposition fulfills every possibility. Besides that conceptual model, a further body of works addresses the very same issues and enforces the understanding of serial strategies of photo-conceptualist artists as archaic computing mechanisms: early computer art of the 1960s and 1970s.

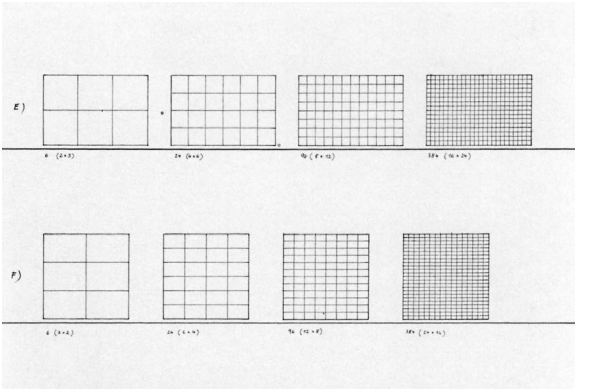

Fig. 49: Gerhard Richter, *Sketch for Farbfelder series* (*Atlas* panel 272), detail, 1971

The comparison of Sol LeWitt's *Incomplete Open Cubes* (1974, Fig. 50) and a screen print of A. Michael Noll's *3-Dimensional Projection of a Rotating 4-Dimensional Hypercube* (1962, Fig. 51) shows evident formal and conceptual affinities, despite their respective (and dissociated) contexts of emergence: conceptual art and computer art. Both images systematize the representation of a geometrical form, in a visual system short of one dimension. LeWitt shows a cube (3D) in 2D, in a series of drawings. Noll, a pioneering engineer in computer visualization methods and input devices,[74] shows a rotating

74 See for example A. Michael Noll, "Computer-generated three-dimensional movies," *Computers and Automation*, Vol. 14, No. 11, November 1965.

tesseract[75] (4D) in a 3D computer application, which is displayed on a 2D screen. Less than the complex interrelations between dimensions in these representation systems, it is the systematized visualization process, the methodical declination of geometrical forms (or in LeWitt's case, of a concept), which proves productive in the context of digital imaging systems. LeWitt – an artist – chose the cube because it was the "least emotive" geometrical form,[76] fitting his conceptual strategies. A. Michael Noll worked as an engineer at Bell Labs in the 1960s, and while he was an expert in digital imaging systems, he clearly had aesthetic aspirations as well. Associated with the nascent computer art, he generated various digital forms such as the hypercubes or complex curves, showcased as screenprints of computer animations. In 1965, Noll exhibited his computer-generated images with fellow researcher Bela Julesz in the Howard Wise Gallery in New York, one of the first shows to display computer-generated images in an artistic context. A few years later, the Musée d'Art Moderne de la Ville de Paris exhibited the work of Manfred Mohr, an Austrian computer artist and engineer (1971), in a solo show titled *Manfred Mohr. Computer Graphics. Une esthétique programme*[77]. The odd point of convergence of these artists lies in the fact that all three – LeWitt, Noll and Mohr – produced variations of cubes (or hypercubes), with "typological" or serial modes of presentation.[78] Although it is not stripped down to that fundamental element, Mel Bochner's *36 Photographs and 12 Diagrams* (1966) operates very similarly, declining a cube containing 343 (7×7×7) smaller cubes. Similar to the grid, which despite its omnipresence in conceptual art is hardly discussed or reflected upon by artists or theorists, the "digital" (i.e., numerical) base of these few examples remains underexplored, and the proximity between analogue processes based on computation and processes that are digital on a technical level is also overlooked. While both can only be paralleled in an attempt to understand a broader context they emerge from, hybrid projects further allow discussion of the relevance of that confrontation, while focusing on the role that conceptual proximity might play in photographic representation.

75 A tesseract is a hypercube with four dimensions. Hollis Frampton was probably the first to claim the tesseract as a theoretical model to address photography in its relationship to time, while circumscribing an early photograph of Muybridge: See Hollis Frampton, "Eadweard Muybridge. Fragments of Tesseract," op. cit., p. 76.

76 Sol LeWitt, "Paragraphs on Conceptual Art," op. cit., p. 15.

77 His first exhibition had also taken place in 1965 at the Galerie Paul Facchetti, Paris. See *Manfred Mohr. Computer graphics. Une esthétique programmée,* exhibition catalogue, Paris, Musée d'Art Moderne de la Ville de Paris, 1971.

78 Sol LeWitt and Manfred Mohr's roughly contemporary visual sequences sharing "three themes: the cube, seriality and incompleteness" have occasionally been read in conjunction. See especially Grant Taylor, "Reception and Criticism of Early Computer Art," in Hannah Higgins and Douglas Kahn (ed.), *Mainframe Experimentalism. Early Computing and the Foundations of the Digital Arts*, Berkeley, University of California Press, 2012, p. 24 – 25.

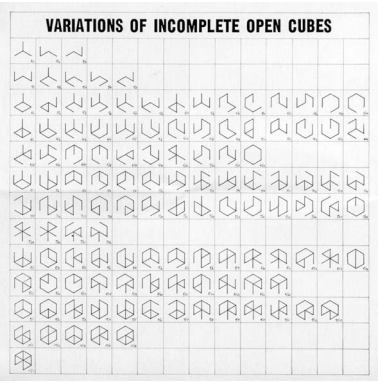

Fig. 50: Sol LeWitt, *Incomplete Open Cubes*, 1974

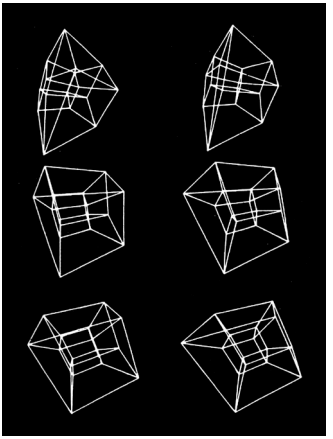

Fig. 51: A. Michael Noll, *3-Dimensional Projection of a Rotating 4-Dimensional Hypercube*, 1962 (screenshot of animation)

During a residence at Singer Corporation (a telecommunications company), Mel Bochner pushed his generative experiments even further. In *Roll*, part of Bochner's "transduction" experiments, the artist arranged four wooden cubes on a horizontal grid, filming them with a video camera and displaying them on a TV screen (Fig. 52). However, in this case the modulation or permutation was not generated by rotating the cubes themselves or by changing the point of view from which they were perceived (as in Mohr or LeWitt's projects), but by the manipulation of the depiction itself: Bochner would play with the horizontal hold adjustment knob[79] in order to generate various alternatives that were captured with a (photographic) camera. This

79 On analogue TV sets, synchronization of horizontal and vertical hold had to be done manually; an out of sync horizontal hold would result in an image rolling up or down the screen. See the *Wikipedia* entry on "analog TV." Available at http://en.wikipedia.org/wiki/Analog_television, accessed on June 27, 2018.

"proto-digital"[80] project clearly conceptualizes the convergence of image and generated processes. But Bochner wanted to proceed even further, as his account of that period shows:

> *One of my projects was to feed numbers into the computer and the computers would generate permutations of those numbers which would be printed out as photographs. [...] Unfortunately [it was] a bit too early, because they didn't have the technology to do it.*[81]

The interconnection of digital technologies and conceptual art in the 1960s and 1970s unveils a contextual common ground in which formalization and codification, as much through concrete examples as through self-reflexive experiments addressing the mechanisms of these procedures, play a central role. These few examples show how the visual production in an artistic context, through multiple processes (serial imagery, typology, permutation, etc.) and visual outputs (grids, numbers, etc.), reflected the mathematical formalization of the world. If one considers photography, it has to be emphasized that an analytical approach to the medium addressed and interrogated its depictive abilities, eventually focusing on the image itself.

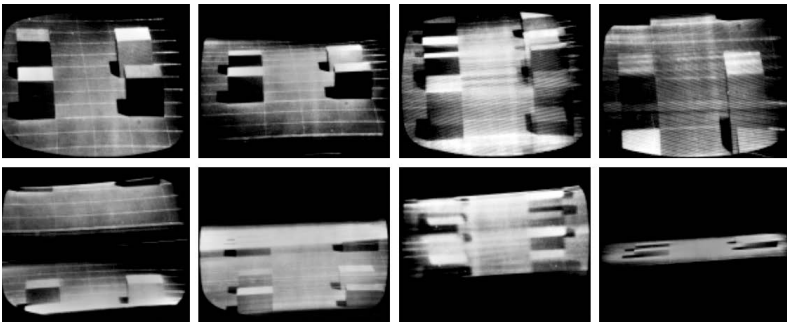

Fig. 52: Mel Bochner, *Roll*, 1968 (8 photographs of TV screen, 50 × 60 cm each)

All these projects clearly reflect the systematized declination of a discreet element through mathematical computation. As such, they echo algorithmic calculations of nascent digital technologies, either explicitly, through technical mechanisms (i.e., computer art), or on a more abstract level, through the emulation of its processes (i.e., conceptual art). But rather than using the binary system of 1s and 0s of every

80 Luke Skrebowski uses the "proto-digital" to describe the generated video output. In Luke Skrebowski, "Productive Misunderstandings. Interpreting Mel Bochner's Theory of Photography," *Art History*, Vol. 32, Issue 5 (Special Issue: *Photography after Conceptual Art*, edited by Diarmuid Costello and Margaret Iversen), December 2009, p. 923.

81 Interview of Mel Bochner by Hans Ulrich Obrist and Sandra Antelo-Suarez, on *e-flux*, n.d. Available at http://projects.e-flux.com/do_it/notes/interview/i003.html, accessed on June 27, 2018. Quoted by Luke Skrebowski, "Productive Misunderstandings. Interpreting Mel Bochner's Theory of Photography," op. cit., p. 920.

computational system as the smallest denominator,[82] they address these combinatory mechanisms with one of the smallest three-dimensional elements, whose declination produces a *visual* outcome in two dimensions: the cube. Doing so, these strategies literally emulate the functional principle of the computer, which transforms binary data into an image, an experiment conducted by Jörg Sasse's generative *Speicher* forty years later.

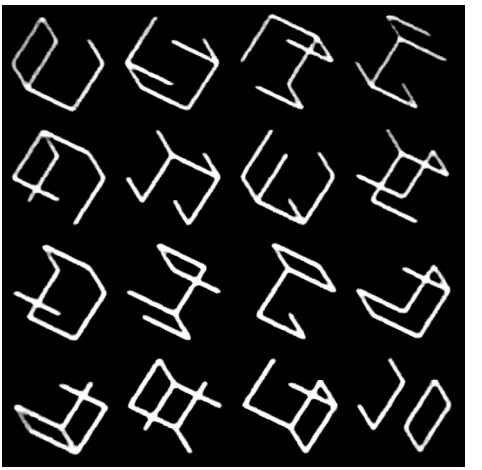

Fig. 53: Manfred Mohr, *Cubic Limit*, 1973 – 74 (computer animation transferred on 16 mm film, 4 min., screenshot)

At this point, the correlation between the graphical computed outcome and the photographic image ought to be clarified. Throughout the 1960s and the 1970s, photography has been singled out as an autonomous object through various strategies. Both Ed Ruscha's *Los Angeles Apartments* and the Bechers' *Fachwerkhäuser* were subordinated to serial sequencing or typological classification, and their photographs were imbued with an increased autonomy as images. But as the comparison of LeWitt's *Four Basic Kinds of Straight Lines and Their Combination* (1969) and *Brick Wall* (1977) has shown, both the photographs and the drawing constitute a graphical outcome of a concept. As such, both are images, but the photograph remains a codification of reality, which leads to its inscription into another history and tradition. Despite having gained autonomy as images, the Bechers' typological photographs arranged in orthogonal grid systems remain depictions. If we admit that similar comparative processes underlie the cube variations of Mohr, Noll or LeWitt and the Bechers' photographs, then the depicted buildings can be interpreted as discrete units like these cubes. The industrial structures were often photographed from various points of view – as the cube permutations –, but these images

82 That binary pair, called the bit, constitutes the primary unit in computing, based on the two values it can embody: either true (1) or false (0).

were hardly shown together after the 1960s,[83] and the frontal depictions dominate the reception of their work in the artistic field. The typological image as theoretical unit, interpolated in the grid system, could consequently be correlated with the conceptual and formal denominators of Noll or LeWitt (i.e., the cube) on the one hand, and with its equivalent in digital imaging systems, the pixel, on the other.

Fig. 54: Bernd and Hilla Becher, *Fachwerkhäuser* typology, 1993 (b/w)

Obviously, the comparison cannot be supported on a strictly technical level. But all these generative processes possess a similar computational framework. Manfred Mohr's generated cubes, such as the 1976 *Cubic Limit*[84] (Fig. 53) emulate every possible variation of a rotating cube, depicted in 2D. A pixel stands for every possible color a digital imaging system is able to produce (see Fig. 55), which varies from 1 bit (black and white screen) to 24 bit (16.7 million colors). An image of a water tower in a typological system embodies every shape a cooling tower can express: "structures with the same function (all water towers); structures with the same function but with different shapes (spherical, cylindrical, and conical water towers); structures with the same function and shape but built with different materials (steel, cement, wood, brick, or some combination such as wood and

83 There are various types of views in the Bechers' work besides the typologies, but the latter seem to have polarized interest and focus throughout the decades, primarily because these typeforms enacted the single-image autonomization and the convergence with conceptual art. Their "industrial landscapes," for example, do not try to depict individual buildings but rather aim at "contextualizing heavy industrial plant[s] in [their] urban and rural environment" (See Heinz Liesbrock, "*Bernd und Hilla Becher. Coal Mines and Steel Mills*," in *Bernd und Hilla Becher. Coal Mines and Steel Mills*, Munich, Schirmer/Mosel, 2010, p. 5). But such views were gathered for the first time in the 2010 exhibition *Coal Mines and Steel Mills* in the Oeuvre of Bernd and Hilla Becher" in the Josef Albers Museum in Quadrat (Ruhr), which suggests that they were to a certain extent underevaluated, compared to the typologies.

84 The animation created on a CDC 4600 computer is rendered on 16 mm with a Datagraphix 4460 microfilm camera. It was first exhibited at Galerie Weiller, Paris, in 1975. See *Manfred Mohr. Dessins génératifs. Partie 1, travaux de 1973 – 1975*, exhibition catalogue, Paris, Galerie Weiller, 1975.

steel); structures with the same function, shape and materials," as Carl Andre systematically notes in 1972.[85] Every one of these three denominators has a different status in its relation to imaging systems or photography. But all three maneuver within a set framework, working with the same generative processes within grid patterns, legitimating the comparison.

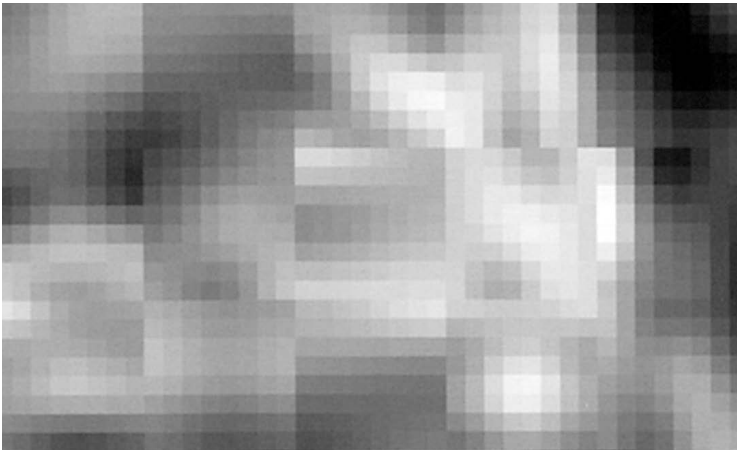

Fig. 55: Thomas Ruff, 3 × 5 squares with double-pixel structure, detail of *jpeg msh01*, 2004

The explicit connection of the Becher students with the context of the emergence of digital computing systems and conceptual strategies in the 1960s has hardly ever been mentioned. Although Thomas Ruff is commonly posited as an "experimental" or "conceptual" photographer, Kate Busch is one of the few scholars to connect his work with the historical figures of conceptual art.[86] Gursky has occasionally been called a "post-conceptual" photographer,[87] as will be discussed below. Despite its omnipresence, the grid is primarily mentioned in their historiography as a compositional structure and is related to painterly models rather than the typology. An essay by Jens Schröter is one of the rare texts in the historiography of the Düsseldorf School to refer to Krauss' text,[88] and which for instance addresses the grid not only as a formal model but also as a conceptual entity in the work of Jörg Sasse. The "digital" work of Ruff, Sasse and Gursky will thus be examined subsequently from that perspective, with the intention of establishing the definitive correlation between digital processes and their proto-digital forerunners.

85 Carl Andre, "A note on Bernhard and Hilla Becher," op. cit., p. 66.
86 Kate Busch, "The Latest Picture," in Douglas Fogle, *The Last Picture Show*, op. cit, p. 262.
87 Mark Godfrey, "Roni Horn's Icelandic Encyclopedia," in Diarmuid Costello and Margaret Iversen (ed.), *Photography after Conceptual Art*, Chichester (West Sussex) and Malden (MA), Wiley-Blackwell and Association of Art Historians, 2010, p. 141. Ibid., p. 51.
88 Jens Schröter, "Das ur-intermediale Netzwerk und die (Neu-) Erfindung des Mediums im (digitalen) Modernismus. Ein Versuch," op. cit., p. 597 – 599.

PART 3

EMERGENCE
EMERGENCE
EMERGENCE
EMERGENCE
EMERGENCE

OF

DIGITAL
DIGITAL
DIGITAL
DIGITAL

TOOLS
TOOLS
TOOLS
TOOLS

IN

DÜSSELDORF
DÜSSELDORF
DÜSSELDORF
DÜSSELDORF

In the period of emergence of digital technologies in Düsseldorf photography, three major photographers have retouched or constructed their images using these new tools. In the late 1980s and early 1990s, Thomas Ruff has primarily worked with subtractive retouching techniques, digitally removing or altering specific picture elements. Andreas Gursky started creating visually seductive tableaus, sewing together multiple images without any other intervention. In a second step, he started applying subtractive techniques similar to Ruff's, in order to create increasingly generic large-format images. Jörg Sasse produced painterly images, in which digital compression algorithms were visible, reflecting the common aesthetics of image compression formats (e.g., jpegs) used in the early years of mainstream computing, mainly transforming recycled imagery. The ability of the resulting images to address documentary forms, the role of digital retouching tools as either a hindrance or as an asset in the work of photographers commonly associated with the Bechers, thus constitutes one of the key questions of the third chapter of this book.

Another main articulation addresses the critical and scientific discourse surrounding these practices, interrogating the modalities with which the dominant model "Düsseldorf photography" has been constructed and pursued. The common discourse, when it reflects upon them, tends to postulate that digital manipulations are either a way of increasing the documentary value of an image (e.g. Andreas Gursky) or that they do not play a significant role (e.g., Thomas Ruff). Despite the commonly dogmatic position toward image retouching in photography, the use of digital tools to "manipulate" photographs seems in that case to be interpreted according to the predominant paradigm that Düsseldorf photography is analyzed by. Jörg Sasse's case is quite particular in this respect, as his overtly digital images are rather perceived as formalistic experiments. They are commonly connected with interpretative models based on painting, and their relationship with vernacular photography and visual culture often remains unexplored. While the digital is perceived quite differently in the work of these three artists individually, it will be argued that it plays an important role in the inquisitive and self-reflexive approach to photography, which reflects a reconfiguration of photographic representation. A shift toward generic representational forms, engaging with a new relationship to the depicted reality, will thus be explored in correlation with the use of digital tools and technologies, in order to understand the genesis of what we might call new documentary forms.[1]

The early phase of integration of digital technologies in Düsseldorf (1987–1998) can be schematically broken down into several technical processes – retouching, image stitching and compositions –, all of which have similar aims: chromatic and formal simplification of the image, tendency toward generic forms and shapes, inclination

1 The not yet defined terminology is to be conceived generically and bears no explicit connection with the eponymous Tate Modern exhibition series (2012), curated by Simon Baker and Shoair Mavlian. See "Focus on Photography at Tate Modern," available at http://www.tate.org.uk/about/press-office/press-releases/focus-on-photography-tate-modern-summer-2011, accessed on June 25, 2018.

toward frontal tableaus, increase of size and change of form factors, and distribution of picture elements on orthogonal grid patterns. In the artistic strategy of Thomas Ruff, Andreas Gursky and Jörg Sasse, these processes are often used to construct images, rather than aiming to depict reality. In that period, their work gradually shifts toward a self-reflexive approach of the medium, considering the observer as a vector of a perceptive act that confronts knowledge with images. As such, their work reproduces, and focuses on *images*, and can be seen as undertaking to question visual culture, much more than as attempting to document the physical world.[2] This apparently trite statement is only formulated by the historiography when addressing particular artists or series (especially Ruff's portraits), but it is never considered a common ground of Düsseldorf photography. The period of emergence of digital tools in Düsseldorf is thus defined by the merging of images showing the real world – a documentary position similar to the original objective in the Bechers' typologies – with images of depictions of reality, in a more conceptual position. This merging is achieved by photographically arranging the real world; it is depicted orthogonally within the picture plane and aligned on picture grids. The chief endeavor is to bring the physical world into line, and to superimpose its depiction and the images of its depiction. In this movement, reality itself is eventually discarded, only to retain its representations, reduced to simplified, generic elements. A further implication of this formal and geometrical translation lies in the rejection of the indexical value of the photographic image, reconstructing an iconic, self-reflexive reality, depending much more on the mnemonic capabilities of the viewer than on the semiotic link to the physical world it refers to. Discursively, this new reality is often even considered superior to a strict record or imprint – as especially Gursky and his commentators argue –, improving photography's limitations: a super-documentary emerges, which clearly marks a shift in the rhetorical (more than theoretical, as these developments only have been hinted at) conception of the medium.

The second phase of uses of digital technologies in Düsseldorf (1999 – 2015) will subsequently address the increasingly complex technologies used by Ruff, Gursky and Sasse and will engage with a newly available technology that yields uncharted visual economies: the Internet. Thomas Ruff's *nudes* (1999), based on recycled pornographic imagery found on the web, thus mark the differentiation of the period of emergence dealt with in the second part, and sustain a confrontation with digital technologies, the implications of which reach far beyond retouching and image composition.

2 Stefan Beyst (a photographer) is for example one of the few commentators noticing that Gursky primarily reproduces images, rather than the real world. See Stefan Beyst, "Andreas Gursky. From a Spirit's Eye View," at *www.americansuburbx.com*, March 2007. Available at http://www.americansuburbx.com/2011/08/andreas-gursky-from-worlds-spirits-eye.html, accessed on June 25, 2018.

A DIGITAL RETOUCHING TOOLS

1 THOMAS RUFF'S "HÄUSER" SERIES

The Gwerder Studio

Erasing an element in a photograph has become an extremely simple operation. Since 2010 Adobe Photoshop, the professional reference retouching software, has allowed users to simply delete picture elements by marking the approximate border of an undesired object in a reasonably contrasted era – for example a tree in front of a building façade –, in order to make it disappear, using a "content aware filter." The program automatically computes a virtual pattern, based on the background, to replace the removed object.[3] Until recently, even more so in the late 1980s, this kind of operation would have taken a lot of time and required a meticulous reconstruction of the missing information. The removal of a signpost and a tree, and the closing of a roof window, in one of the first digitally retouched photographs, Thomas Ruff's *Haus Nr. 1 I* (1987, Fig. 56 & Fig. 57),[4] would thus necessitate a painstaking reconstruction of the building's façade, using tools only available in very few places. Software only had basic features; elaborate brushes such as the clone stamp tool[5] only appeared years later. Changes therefore had to be realized almost pixel by pixel. Computers

3 The "content aware" filter has first been implemented in Photoshop CS5 (2010).

4 Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 191.

5 A brush allowing to "paint with a sample of an image." *Adobe Photoshop CS3 User Guide*, p. 29 and 195 – 198. Available at https://help.adobe.com/archive/en_US/photoshop/cs3/photoshop_cs3_help.pdf, accessed on June 27, 2018.

were extremely weak in terms of computing power and only corporate machines, already in use in advertising, were powerful enough to perform such complex tasks. To execute these manipulations, Thomas Ruff had to request the assistance of the photo-lithographers of a Swiss laboratory, the Gwerder Studio in Zurich, one of the few whose employees had sufficient skills and access to machines with adequate computing power to achieve the required task.[6]

Fig. 56: Thomas Ruff, *Haus Nr. 1 I*, 1987 (179 × 278 cm)

Before the work processes of this early retouching are analyzed as such, their place in Ruff's historiography ought to be evaluated, in order to understand their specific role in the reception of his work. Interestingly, even though the retouching of the *Häuser* series is mentioned repeatedly in Ruff's historiography, the actual name of the Studio Gwerder is hardly ever brought up. Considering that the Grieger Studio Düsseldorf, one of the main producers of large-format photography in the artistic context, is repeatedly mentioned – at least in recent years –, this is rather surprising. Only a few occurrences of the company Gwerder could be found in the literature on Ruff's work. The first mention can be found in Ruff's biography in Winzen's monograph *Thomas Ruff, Fotografien 1979–heute*.[7] The most important indication, based on Winzen, can be located in Stefan Gronert's texts for the main catalogue of the Düsseldorf School.[8] The mention of the Swiss studio also appears twice on the Internet. One occurrence can be found in an

6 According to Gwerder Art Zurich, the archive material of this period has been lost due to a data migration.

7 Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 254.

8 Stefan Gronert, "Photographische Emanzipation," in Stefan Gronert, (ed.), *Die Düsseldorfer Photoschule*, op. cit., p. 43.

interview with Helga Meister[9] – author of the first book on Düsseldorf photography[10] – for the magazine *K.West*, in 2008. In the interview, Ruff does not specifically reflect upon the studio. It further appears in Thomas Ruff's biography on the website of the Fiftyfifty Gallery, a non-professional association connected with a socially oriented street magazine, which doesn't mention its source, nor the publication year.[11] We can nevertheless date the mention to approximately 2001, considering that Ruff's biography on the website runs from his birth (1958) to that date. The year 1987 reads:

> *He starts the Häuser series, in which he uses digital retouching for the first time. In these years, there was no fotolab in Germany that could digitally retouch large-format negatives. After some time searching, he comes across the Studio Gwerder in Zurich, which agrees to do the desired retouching on a large image-file.*[12]

Both occurrences are probably based on Winzen's monograph. On the web, information such as biographical elements are typically copied and used over and over. The indication of a "Swiss Lab" appears for example in an often-quoted article by Skyn Kynaston, but without citing the name Gwerder.[13] Considering Ruff's considerable historiography, it might of course appear elsewhere. But it is nevertheless intriguing that the studio is hardly ever mentioned online and in the literature. Consequently, it could be argued that this results from a tendency to read Ruff's work in the lineage of German documentary photography, a paradigm in which the mention of retouching is either knowingly ignored or – and this is probably the case most of the time – unknowingly overseen. This hypothesis based on statistical criteria needs to be explored in more depth, but it already indicates a particular stance. The role of retouching itself has not been considered essential in the understanding in the study of the *Häuser* series. But is retouching indeed irrelevant, which would explain the disinterest, or does it on the other hand engage with important aspects of Ruff's strategy? Only the confrontation of the effective analysis of the mechanisms at play in this series and the comprehensive study of the reception of these images allows a valid assessment of the role of early retouching in his work. Clearly, the *Häuser* series cannot be used as a

9 "K.WEST: Die ersten digitalen *Retuschen* von *Häuser*n entstanden 1987, für die Sie noch ins Labor Gwerder nach Zurich fahren mussten. Hat man die Veränderungen auf den Bildern überhaupt bemerkt? Und wie wurde darauf reagiert? War dieses Nachbessern nicht wider die Ehre der Sachfotografie? RUFF: [...] Man sprach darüber, dass an dem Haus ein paar Sachen weg waren. Bei der Eröffnung hieß es dann: "Der retuschiert." Manche meinten, das dürfe man nicht; andere fanden es ganz toll, wie immer." Helga Meister, "Das Bild ist schön. Thomas Ruff spricht – und schweigt – über seine fotografische Arbeit," *K-West*, No. 2, 2008, available at https://www.kultur-west.de/de/kunst/detailseite/artikel/das-bild-ist-schoen/, accessed on June 27, 2018.

10 Helga Meister, *Fotografie in Düsseldorf. Die Szene im Profil*, Düsseldorf, Schwann im Patmos Verlag, 1991.

11 Available at http://www.fiftyfifty-galerie.de/kunst/592/thomas-ruff/biografie, accessed on 24 May 2018

12 Ibid.

13 Skyn Kynaston, "Calculated Beauty," *Art Review*, No. 53, Summer 2001.

model for Ruff's digital work in general. But its particular position – the houses are Ruff's first digitally retouched images and they incidentally address documentary forms – marks a point of emergence of a new procedure. The evaluation of its reception might allow a better understanding of the fact that digital manipulations have been underexplored in his historiography.

Fig. 57: Thomas Ruff, *Haus Nr. 1 I*, 1987, details of altered elements (screenshots from Jan-Schmidt Garre, *Long Shots Close Up*, 2009)

Formats and visual strategy

Several criteria tend to assess the retouching in the *Häuser* series as being rather insignificant in Ruff's strategy. The first relies on statistics: of the twenty-nine architectural views of the series realized between 1987 and 1991, only two were retouched: *Haus Nr. 1 I* (1987) and *Haus Nr. 8 I* (1988, Fig. 58).[14] Despite being one of the earliest examples of "artistic" photography in which elements were digitally erased or altered, the scarceness of the interventions seems to indicate that manipulation in itself did not play the predominant role it did in slightly posterior examples, such as the aforementioned post-photographic corpus or Andreas Gursky's composites, addressed subsequently. Merely used as a tool, digital retouching seems subordinated to a specific conception of photography addressing architecture. The series reproduces sober buildings built between the 1950s and the 1970s,[15] similar to those that Thomas Ruff grew up in in Düsseldorf, and it is characterized by frontal or diagonal constructions, points of view at human height, uniform gray skies, chromatic homogeneity, limited tonal values and a neutral depiction. The pictures, as in Bernd and Hilla Becher's typologies, are mostly devoid of people, cars, traffic signs, vegetation or disturbing elements. As in his teachers' work, Ruff depicts three-dimensional volumes with specific formal characters, rather than merely documenting specific buildings. Some of the images of the series have been used as illustrations of German architecture or Germany in a more general sense, as Reinhold Happel observes: *Haus Nr. 7 I* (1988) for example was used on the cover of the supplement of the *Süddeutsche Zeitung* of November 30, illustrating the

14 Only the complete title with Arabic and Roman numerals *Haus Nr. 1 I* (1987) and *Haus Nr. 8 I* (1988), or the classification used in Matthias Winzen's *catalogue raisonné*: *HÄU 01* and *HÄU 08*, allows to clearly identify these two retouched images, since there are several other photographs labeled *Haus Nr. 1* and *Haus Nr. 8* (with no manifest classification, chronological, thematic or formal). *Haus Nr. 1 II* (1989), *Haus Nr. 8 III* (1988), *Haus Nr. 8 II* (1989) have not been retouched, but the ambiguous labels have sometimes misled art historians and critics, who have amalgamated distinct images. See Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 191–192.

15 Ibid., p. 191.

upcoming vote for the reunification, titled "Du mein Heimatland: Deutschland vor der Wahl."[16] Happel engages with the represented buildings, describing them as "architecture for the masses," defined by "rationality, anonymity, placelessness" and their social function. *Haus 4 II (Ricola, Laufen),* 1991[17] seems to corroborate that documentary inscription, as the digitally manipulated photograph, a two-part montage combining two images taken in Laufen (CH) by a local photographer, literally documents a building created by Herzog and de Meuron for the Swiss cough drop manufacturer Ricola. But Ruff's images clearly differ from more conventional forms of architecture photography, such as examples from Thomas Struth or Axel Hütte of the same period. Except *Haus Nr. 7 II* (1988) and *Haus Nr. 4 I* (1989), all photographed structures are built upon strict parallelepipeds with clearly delimited angles, with mostly flat but sometimes gable or hip roofs, horizontally and vertically structured in grids through the aligned windows, balconies or structural elements. The frontal or diagonal inscription of the cubic structures into space further adds to the geometrically strict images, which thus acquire sculptural rather than architectural characteristics and visually lean toward the Bechers' typologies.

Fig. 58: Thomas Ruff, *Haus Nr. 8 I*, 1988 (208 × 232 cm)

In terms of reception, the *Häuser* series seems to be situated in a gap between a documentary rhetoric and a formal position in which image construction strategies are predominant, which makes the evaluation of the role of digital technologies in Ruff's work particularly interesting. On the one hand, the strict architectural series, shot frontally or

16 See Reinhold Happel, "Haus. Zu den Architekturfotografien von Thomas Ruff," in *Thomas Ruff*, exhibition catalogue (Bonner Kunstverein/Kunstverein Arnsberg/Kunstverein Braunschweig/Kunst + Projekte Sindelfingen, 1991), Düsseldorf, 1991, p. 61.

17 *Haus 4 II (Ricola, Laufen)* is part of the Herzog and de Meuron series, despite the fact that approach and title might suggest that it is a part of the *Häuser* series. See Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 191–192 and 223 and Sonja Claser, "Photographie parallel zur Architektur. *Interieurs* und *Häuser* im Werk von Thomas Ruff," in Monika Steinhauser and Ludger Derenthal (ed.), *Ansicht, Aussicht, Einsicht. Andreas Gursky, Candida Höfer, Axel Hütte, Thomas Ruff, Thomas Struth: Architekturphotographie*, exhibition catalogue (Kunstgeschichtliches Institut der Ruhr-Universität Bochum, Museum Bochum, 2000), Düsseldorf, Richter Verlag, 2000, p. 104.

constructed diagonally, seems to be inscribed in the history of documentary depictions of architecture, which plays an important role in the history of photography, particularly in Germany. On the other hand, Ruff clearly constructs images, translating architectural forms into geometrical shapes with an emphasis on their formal values. Ruff's careful use of retouching ('as little as possible, but as much as necessary')[18] shows that his formal constructions did not directly depend on digital post-production at that time. But in the 1980s, he seems to have been concerned by retouching and architectural shapes in photography, as the *Zeitungsfotos* series shows. During that period, he collected 2,500 newspaper images from German daily and weekly media, illustrating all sorts of themes, such as politics, history, art or everyday life. Between 1990 and 1991, he chose to print four hundred of them at twice their original size, without captions, dissociating them from their informational context, creating a systematic visual inquiry of media imagery.[19] His interest for the *Zeitungsfotos* originated from the de-realizing effect of newspaper portraits: the halftone pattern resulting from the screen print technology produced an alteration differentiating the print from its photographic counterpart.[20] The series, which has not yet been systematically analyzed, was clearly used by Ruff as a formal model for the understanding of photography: frontal portraits[21] and frontal and diagonal architecture images are omnipresent in this series, which emphasizes the fact that in the 1990s Ruff was merely translating or decontextualizing existing imageries in an artistic context, rather than producing new ones (see Fig. 59).

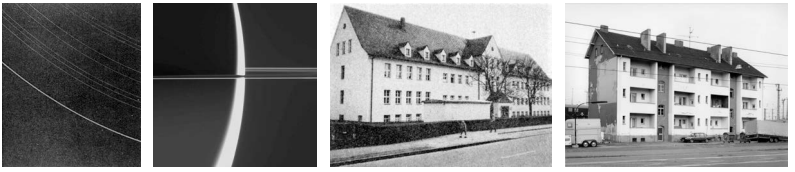

Fig. 59: Thomas Ruff, *Zeitungsfotos* as formal and thematic model (*Zeitungsfoto 354*, 1991, *Cassini 01*, 2008, *Zeitungsfoto 080*, 1990, *Haus Nr. 2 III*, 1989)

While examples such as *Zeitungsfoto 080* (Fig. 59) can be clearly identified as source material for Ruff's *Häuser*, it is yet another aspect of the *Zeitungsfotos* that proves productive for assessing the series. Some illustrations explicitly show Ruff's early confrontation with image manipulation and retouching and the history of such practices. In the printed set of images, two address one of the most famous examples of retouched images in the history of photography, repeatedly quoted in numerous publications: the photograph of Lenin holding a speech in

18 Interview of Thomas Ruff by Ute Eskildsen, in Ute Eskildsen, "Technik, Bild, Funktion. Recherche und Reflexion fotografischer Darstellungsmodelle im Werk von Thomas Ruff," in Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 166.

19 Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit, p. 201.

20 Interview of Thomas Ruff by Patricia Drück, in Patricia Drück, *Das Bild des Menschen in der Fotografie. Die Porträts von Thomas Ruff*, op. cit., p. 116.

21 Ibid., p. 116.

front of a crowd in Moscow on May 5, 1920,[22] in its original unedited version (*Zeitungsfoto 389*) and as a retouched version, in which Trotsky and Kamenev have been cut out (*Zeitungsfoto 388*).

Fig. 60: Thomas Ruff, *Zeitungsfotos* as formal and thematic model (*Zeitungsfoto 088*, 1990, *Porträt R. Huber*, 1988, *Zeitungsfoto 042*, 1990, *jpeg rl02*, 2007)

As André Gunthert notes, retouching practices have always existed but have often been perceived as the "negation of the recording of the visual"; hence, despite its existence, retouching has no history[23] and has long been perceived as a rather unsound and ethically problematic procedure. The fact that Ruff reflects upon this famous example suggests that these kinds of practices and more generally the construction of meaning in photography were concepts whose implications he was exploring at that time. These specific examples epitomize Ruff's interests: while clearly addressing the formal characteristics of an image, he also interrogates its documentary attributes. As such, the *Häuser* could be interpreted both as documenting Düsseldorf architecture from the 1950s to the 1970s and as strictly formal experiments. In the two manipulated images of the series, the retouching seems to be subordinated to image construction strategies rather than to a semantic manipulation, as it guarantees a particular visual pattern. But while image composition in general in Ruff's case is important, digital retouching is here rather used scarcely. Ruff has increasingly used digital technologies, and they have become an important tool and field of interest, as will be shown subsequently.

The *Blaue Augen* series (1991) is a reinterpretation of twelve *Porträts* in which the eyes have been digitally colored in response to several critics accusing the series of depicting traits associated with eugenic ideologies (Jean-François Chevrier and Klaus Ottman).[24] The *Plakate* (1996 – 1998) were made on a computer; the *l.m.v.d.r.* series (1999 – 2001) was partially digitally retouched. All images taken from Internet sources are obviously digital, from the early *nudes* experiments

22 The case is for instance documented in William J. Mitchell's *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op. cit., p. 200 – 201.

23 André Gunthert, "'Sans retouche.' Histoire d'un mythe photographique," *Etudes photographiques*, No. 22, September 2008.

24 In *Galeries Magazine*, No. 36, April/May 1990 and *Flash Art*, Vol. 23, No. 154, October 1990, respectively. A response to those claims from art historian (and Ruff's gallerist) Jörg Johnen can be found in Jörg Johnen, "Street and Interior. On the Work of Thomas Ruff," *Parkett*, No. 28, 1991.

(1999) to the recent *ma.r.s.* pictures (2010). The *Substrat* (2001–2005) and *Zycles* (2008) series have been computed from digital sources and extruded from mathematical formulas respectively, and the *Cassini* series (2008–2009) is based on edited images photographed by the eponymous unmanned NASA spacecraft.[25] The erasing of picture elements in the *Häuser* series, however, interestingly appears in a corpus where the digital and its deriving visual culture is not yet a central feature of Ruff's work (or vernacular visual culture for that matter). His 1980s images such as the *Interieurs* (1979–1983) and the early *Porträts* series seem at least connected with documentary aesthetics, despite an obvious yielding to compositional patterns. Their formal construction aspires to a certain extent to neutrality and stems from a capturing protocol apprehending similar subjects repeatedly. Formally and conceptually, the series recalls the Bechers' approach and their teaching. Both the *Porträts* and the *Häuser* series systematically adapt typological patterns, commonly associated with a particular kind of documentary photography or with scientific classification protocols. The subjects are framed analogously, and the viewpoints are either frontal or diagonal and are situated at similar levels. The *Häuser* were photographed in the early morning hours between January and March in order to guarantee a homogeneous light[26] and the portrayed individuals of the *Porträts* pose in front of a monochrome background, in color in the early small-scale images and white in the large formats. Clearly, there is a strong formal and conceptual relationship with the Bechers. However, while the progression from documentary endeavor to a predominantly visual strategy in the Bechers' work is complex,[27] Ruff's images are less indefinite: he *builds* images – avowedly with a visual reference, which does play an important role in their composition –, while addressing the potentialities and limitations of the medium used.

Yet that position undergoes interesting variations depending upon the photographed object. While he can modulate clothes and expressions in the portraits, there is no possible intervention in the capture of a building.[28] Although Ruff gives a certain freedom to the photographed individuals – for example, allowing them to choose the background color of their portrait[29] –, he also crams them into a very strict pattern, recalling identity photograph protocols, creating an extremely homogeneous representation of individuals. Similar to the Bechers' series with almost identical buildings, such as the *Fachwerkhäuser*, the decontextualized and systematized depiction produces very homogeneous images, the individual character of which tends to fade. While this process is at work in the *Häuser* series as well, the remaining context surrounding the buildings, much more present than in black and white equivalents, rather positions the

25 See www.nasa.gov/cassini, accessed on July 20, 2018.
26 Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 191.
27 See for example Martina Dobbe, "Typologie und Bookwork. Bildkonzepte des Seriellen bei Bechers und Ruscha," in *Frame #2. Jahrbuch der Deutschen Gesellschaft für Photographie*, Göttingen, Steidl, 2008.
28 *Thomas Ruff. Oberflächen, Tiefen – Surfaces, Depths*, op. cit., p. 223.
29 Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 180.

series as a less conceptual documentary project. And although the *Porträts* are almost completely decontextualized – even if haircuts and clothes can still be associated with a particular period of time –, the architecture shots are situated in a real living space. Interpreted by Ruff as an attempt to carry his *Interieurs* to the outside, the *Häuser* seemingly retain or suggest a stronger, maybe more "traditional," documentary factor. The considerable differentiation of the buildings, while expressing a logically similar shape based on a quadrilateral volume, does not allow the comparative decontextualizing effect occurring in most Becher series, and the considerable size of the prints does not allow a comparative effect spanning above two or three images. The buildings thus retain a certain degree of individuality. Although digital tools have been used in two images of the series in order to visually enhance the volumetric dimension of the buildings, these tools do not play an important role in the overall series.

The formats used by Ruff during that period provide another analytical axis allowing the evaluation of the *Häuser* series. While most *Porträts* have an original size of 24 by 18 centimeters, Ruff started to experiment with larger formats in the mid-1980s, producing fourteen 210 by 165 centimeter *Porträts* prints in 1986,[30] a format scale which became standard for the *Häuser.* Over time, many *Porträts* have been printed or reprinted at that size, with some variations.[31] Sometimes they are even exhibited in various sizes at the same venue (e.g., Kunstverein Bonn in 1991). The "decreased reality"[32] of the small photographs still approaches the original size of the models, while the blown-up images produce a de-realizing effect. The large photographs have become the standard exhibition format: as Michael Fried notes, "the enlarged portraits have completely displaced the earlier [small] ones in the public awareness of his work."[33] Obviously, they engender a different relationship between the viewer and the portrayed individuals, whose enlarged traits are dissolved into the enhanced visual presence of the pictures. Confronted with singular features of the faces, to invisible details such as pores or hairs, the observer deconstructs the image into partial views. The size imposes a new physical relationship – except at a considerable distance, the image cannot be entirely grasped – and a new perception; the massive prints seem to invert the domination between beholder and image. The format changes are thus a constitutive parameter of the

30 He was given the financial support to have the five first large format portraits executed by a professional lab by gallery owner Philip Nelson (Nelson Gallery, Villeurbanne) earlier that year. See Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 180 and 254.

31 From a minimum of 190 × 185 cm (Thomas Ruff's self-portait) to a maximum of 235 × 185 cm.

32 Matthias Winzen, *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 183.

33 Michael Fried, *Why Photography as Art Matters as Never Before*, New Haven/London, Yale University Press, 2008, p. 143 – 144.

Porträts,[34] while its implications are minor in the *Häuser*. The *Häuser* series, realized between 1987 and 1991, has been printed in large formats only.[35] The shorter side of any print is at least 180 centimeters; the longer side is at least 230 centimeters. The relationship between depictured object and image isn't thus defined by a "bigger than nature" interconnection as in the large format *Porträts*, but still represents a "decreased reality," as in a more conventional small format. While the relationship to the spectator in the large *Porträts* clearly dissociates the image and the photographed object – in that case through the format variation – such obvious scission cannot be as evidently postulated. The *Häuser* remain photographed houses, much more than the *Porträts* are portrayed individuals. Frontality and size dissolve the *Porträts* into two-dimensional, bigger than nature images, which clearly is not the case in the *Häuser*. While format variations play a central role in Ruff's strategy and this particular parameter has in itself been acknowledged by the reception of his work (especially addressing the *Porträts*), few scholars have specifically engaged with that aspect in the *Häuser* series, as if large-format photography had become standard and needn't be analyzed. Large-format photography has been commonly interpreted as a way of proclaiming the medium's artistic value (e.g., Jean-François Chevrier[36]), disregarding the actual role of the format variation in the work process of the artist. In Ruff's case, only the portraits have been consequently examined in that respect. This particular feature is commonly neglected in other series, which obviously plays an important role in the ability of a photograph to depict.

In terms of width to length proportions, some of the *Häuser* tend to be much wider than conventional formats. The digitally retouched *Haus Nr. 1 I* (179 × 278 cm, 1987) and *Haus Nr. 4 II* (Ricola, Laufen, 153 × 295 cm, 1991), but also the unretouched *Haus Nr. 12 II* (183 × 287 cm, 1989) and *Haus Nr. 1 II* (183 × 302 cm, 1989), have an extremely stretched horizontal form factor. If that shape reflects the

34 The critical reception and curatorial projects tend to address the large formats only. The small *Porträts* are still exhibited, for example, at the exhibition of the Museum Folkwang Essen (2002), *Thomas Ruff. Interieurs – Porträts – Häuser*, where they have been shown along with the large versions. But many exhibitions, as a large part of his historiography, only address the large versions. For example, in a recent essay addressing Ruff's whole series, Carolyn Christov-Bakargiev introduces the *Porträts* as "looming, gigantic portraits of happy people," only considering the large formats. This example is particularly meaningful considering that it has been published in an important monographic exhibition catalogue, which surveys and comments on major exhibitions of and publications about Thomas Ruff's work. Published in 2009, it covers an important segment of the artist's production, which the "official" monographic project published in 2001, *Thomas Ruff, Fotografien 1979–heute* doesn't, and thus surveys numerous projects in which both formats are present. Carolyn Christov-Bakargiev, "Thomas Ruff at the End of the Photographic Dream," in Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, exhibition catalogue (Castello di Rivoli Museo d'Arte Conteporanea, Rivoli-Turin, 2009), Milan, Skira, 2009, p. 14.

35 Except for various medium format editions. See Matthias Winzen, *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 248 – 251.

36 See *infra* and Jean-François Chevrier, "The Adventures of the Picture Form in the History of Photography," in Douglas Fogle (ed.), *The Last Picture Show. Artists Using Photography. 1960 – 1982*, op. cit. Originally published in a slightly longer form in Jean-François Chevrier, "Les aventures de la forme tableau dans l'histoire de la photographie," in *Photo-kunst. Du XXe au XIXe siècle, aller et retour/Arbeiten aus 150 Jahren*, exhibition catalogue (Staatsgalerie Stuttgart, 1989), Stuttgart, Verlag Cantz, 1989.

dimensions of the buildings the photograph is framed around, it also shows a certain liberty with the use of photographic formats, which commonly replicate the proportions of the sensor of the camera. The *Plattenkamera* used by most Düsseldorf photographers (18 × 13 cm or 24 × 18 cm) has proportions similar to a 4/3 television set, while these images are even more panoramic than 16/9 formats. In terms of proportionality, a significant number of wide images have indeed been digitally retouched. Clearly, *Haus Nr. 4 II (Ricola, Laufen)* constitutes the most extreme example; it has been composed with two separate photographs merged into one image.

Andreas Gursky's extremely wide formats from the early 1990s (e.g., *Paris, Montparnasse*, 1993), which also derive from the stitching of two photographs, bear a very similar pattern. However, the existence of unretouched examples shows that width is not necessarily connected with digital post-production. Consequently, if digital tools do not impair the legibility of the *Häuser* series as (potentially) documentary images, and the large and wide formats do not transform their perception (as in the *Porträts*), certain significant transformations in the conception of the photographic image do appear already. Revealing an emancipatory position toward "traditional" values of the photographic apparatus (i.e., standard formats) and discourse (i.e., the importance of the unretouched image as imprint), these transformations remain subtle, which explains their reception at the time. But despite their innocuous character, the formal developments connected to digital technologies and the relationship toward depiction deprived from its indexical constraint already establishes certain defining traits of some Düsseldorf photographers, such as the panoramic format.

Retouching and the documentary

The aim of this chapter is to evaluate the common association, especially in the 1990s, of Thomas Ruff's *Häuser* with the German tradition of architecture photography, while at the same time interpreting his work as a formal-aesthetic approach. The series might indeed recall the often-invoked models such as Albert Renger-Patzsch or the Bechers, despite being in color and having specific formal features. Ruff has always rejected that tradition, repeatedly arguing that photography is inherently unable to represent reality, as it necessarily is a construct, and thereby attempting to emancipate himself from the discourse pretending to capture reality. The idea of strict documentation, as it has been advocated by an important tranche of the history of photography and its protagonists is thus for him of little significance, which partly explains his formal approach to the architectural object. His perception of image retouching also derives from these principles: "digital manipulation merely is a new tool in the history of retouching and manipulating photographic images,"[37] he argues. Addressing the difference

37 Jörg Colberg, "A Conversation with Thomas Ruff," commissioned by *American Photo*, March 2008. Available at https://www.popphoto.com/photos/2008/12/conversation-thomas-ruff, accessed on June 27, 2018.

between himself and the Neue Sachlichkeit photographers, he emphasizes "that the difference between them and [him] is that they believed to have captured reality and [he] believe[s] to have created a picture."[38] Accordingly, his oeuvre has been commonly read as the result of two-dimensional visual experiments, rather than as engaging with the ability of the medium as trace or archive:[39] "a credible invention of reality," Matthias Winzen summarizes.[40] Of course, the staggering corpus of art historical and critical texts reflecting upon Ruff's work – Winzen's monograph published in 2001 already mentions between one hundred and fifty and two hundred catalogues of group shows and personal exhibitions – can neither be summarized nor classified easily. The complexity and extreme visual heterogeneity of his oeuvre – his motives span from portraits, architectural photography, photomontages, recycled popular images to scientific imagery and his photographs from seemingly documentary images to nonfigurative computer generated "pictures" – has logically driven his commentators to embrace its totality, in which depiction or documentation only play a partial role. Ruff has always claimed to make images rather than documents. Consequently, his use of numerous kinds of representational modes has led recent scholarship on his work to overlook the documentary reception of his early work, especially his early architectural photography.[41]

In an interview with Helga Meister (2008), Ruff recalls that after he exhibited his retouched house for the first time in the Haus Lange in Krefeld (1988), along with Elke Denda and Michael van Ofen, the retouching triggered dogmatic commentaries against digital image manipulation.[42] The catalogue of the exhibition published in 1988, like several publications of the late 1980s and early 1990s, does not mention the digital intervention but rather emphasizes the "rigorous" documentary approach.[43] There is often no evidence as to why the retouching has not been mentioned – if the omission has been made out of ignorance or for other reasons – which makes an assessment of sources difficult. Rather than aiming at an exhaustive study of the phenomenon, we will thus focus on examples of repeatedly quoted texts from the late 1980s and early 1990s that hold a particular place in Ruff's historiography, which either mention retouching or which do not.

The exhibition catalogue of the Bonner Kunstverein,[44] for example, published 1991, explicitly addresses computer manipulation. In a short text titled "Zu der Architekturfotografie bei Thomas Ruff," Reinhold Happel precisely mentions some of the interventions, which is rather untypical:

38 Interview Philipp Pocock and Thomas Ruff, *Journal for Contemporary Arts*, op. cit.

39 His later non-figurative or appropriative experiments have probably comforted this interpretation of his early series, such as the *Häuser* and the *Porträts*.

40 Matthias Winzen, "A Credible Invention of Reality," in Matthias Winzen (ed.), *Thomas Ruff, Photography from 1979 to the Present*, op. cit., p. 131–161.

41 Which was not yet the case in the 1980s.

42 Helga Meister, "Das Bild ist schön," *K-West*, op. cit.

43 *Bilder. Elke Denda. Michael von Ofen. Thomas Ruff*, exhibition catalogue (Museum Haus Esters, Krefeld, 1988), Krefelder Kunstmuseen, 1988.

44 *Thomas Ruff*, exhibition catalogue (Bonner Kunstverein, Kunstverein Arnsberg, Kunstverein Braunschweig, Kunst + Projekte Sindelfingen, 1991), op. cit.

> *Even more so, it seems surprising that Ruff has intervened in some images, even though it can only be detected if they are compared with the original negatives. In "Haus No. 8 I" 1988, a signpost obstructing the view on the multi-story car park has disappeared, and an entire floor of a row of houses on the right side of the background has been trimmed off. These two manipulations lead to a much cleaner cutting out of the main motive [...] from the surroundings. The pursued objective, which wasn't to be achieved during the capture on location and whose realization proves problematic during the critical inspection in the lab, could eventually be realized through high-end computer technology.*[45]

While acknowledging the logical role of the retouching considering the "pursued objective,"[46] Happel still finds its use surprising, considering the "documentary" approach. His assertion obviously has to be pondered, given that photography retouching – digital *or* analogue – is usually considered suspicious. It is hardly ever simply considered on the same level as other types of parameters, such as the choice of the photographed subject or the frame. Happel's position epitomizes a common relationship to the retouched photographic image, rather than the digital nature of the post-production. One detail the quote also reveals, which again is very symptomatic of the discourse on retouching more generally, is the fact that the digital intervention is invisible and can only be traced back with the "original negative,"[47] which indicates that its appraisal is governed by its visibility or invisibility. There can be no general assumptions on the positions toward digital retouching in the early stages of these technologies. But his particular position reflects a common reaction toward the retouching of photographs, if they are visible or known (e.g., through a catalogue, interview, etc.). Post-photographic images mentioned in the first chapter embody another situation of that position, since the retouching is visible and overt. The conspicuousness of digital post-production technologies defines these images, even if they are not, in fact, digitally produced or edited.[48] The visual evidence – does an image appear to be digitally modified or not – thus plays a key role in the assessment of the reception of these imageries, and the fact that many critics have not discussed this very aspect of the *Häuser* series is probably imputable to the fact that it is *not* visible. One often quoted example of literature that does not address this aspect of his work can be found in *Parkett* 28 (1991), an issue which contains several contributions discussing Ruff's work. In an article titled "Lack of Faith," Marc Freidus describes Ruff's strategy in the *Häuser* series as being subtractive, in its way of decontextualizing the architectural objects: "Ruff strips the buildings of architectural context, inhabitants, vehicles, season foliage, indeed of almost all

45 Ibid., p. 63.
46 Ibid.
47 Ibid.
48 As for example Nancy Burson's early composites, resulting from video superimpositions.

references to daily life or the flow of time."[49] Considering that Ruff did in fact digitally remove a car in one of those images,[50] it is interesting that the article does not bring up this deletion, which would ideally exemplify Freidus' interpretation of Ruff's visual strategy. It is hard to tell if Freidus ignored it or considered it irrelevant, but it seems likely that he wasn't aware of the retouching. Even nowadays, almost twenty years later, it is difficult to trace, as it hasn't been systematically explored. One might, on the contrary, argue that the article's proximity with the first exhibitions of the series could have provided Friedus with more precise information, as the retouching might have been discussed during the opening or mentioned in the newspapers.

Another interesting example of the "omission" of retouching is the repeatedly quoted interview for the *Journal of Contemporary Arts*[51] in 1993, in which Philip Pocock interestingly addresses technology, but in terms of a hypothetical, future use. He asks Ruff if he might "one day" abandon photography "for electronic processes," but he omits any mention of digital retouching in the *Häuser* series, even though he asks about "the buildings [he] photographs."[52] Here again, it is not possible to say if Pocock knew about the image manipulations or if he didn't, but the fact that he addresses the "electronic" as a hypothesis seems to suggest that it was perceived as a potentiality rather than a present-time fact. Jeff Wall's *A Sudden Gust of Wind (after Hokusai)* (1993) and Andreas Gursky's early composites such as *Paris, Montparnasse* (1993) were among the first institutionally acknowledged digital images that could be perceived as digitally retouched because of the (relative) conspicuousness of the post-production. The flying leaves in *A Sudden Gust of Wind (after Hokusai)* obviously cannot be recorded in a single shot, and the form factor and formal construction of *Paris, Montparnasse* suggests a composite photograph; while these features are no proof of digital retouching, they lead to the belief that the image has somehow been tailored. This obviously is not the case in the *Häuser* series. And since Pocock explicitly opposes "electronic processes" and photography, it seems logical that he would not consider the combination of the two.

This series by Thomas Ruff interestingly highlights the changing reception of digital technologies. Since he started to diversify his formal approach, appraisals of his work have increasingly focused on the idea of photography as a construct. This impacted the reception of the *Häuser*, which had rather been interpreted as architecture photography in the late 1980s and early 1990s despite digital retouching. While there can be no definitive assumption as to the reasons why a critic or scholar did not mention digital retouching, the absence of its evocation nevertheless delineates an obvious tendency, governed by contextual preconditions. Neither critical reception nor scientific literature fully ignore digital technologies. Ruff even recalls discussions about the validity of its use, but those interventions clearly did not

49 Marc Freidus, "Lack of Faith," *Parkett*, No. 28, 1991, p. 68.
50 Helga Meister, "Das Bild ist schön," *K-West*, op. cit.
51 Interview Thomas Ruff and Philip Pocock, *Journal of Contemporary Art*s, op. cit.
52 Ibid.

trigger a reaction similar to the contemporary – avowedly predominantly theoretical – post-photographic discourse. The response toward images in which retouching is invisible therefore also reflects the opposition between a pragmatic reading of them and a dogmatic theoretical stance, detached from visual evidence, whose comparability can obviously be questioned.

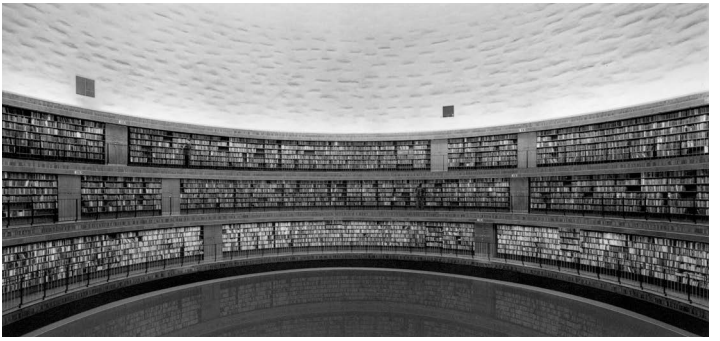

Fig. 61: Andreas Gursky, *Library*, 1999 (206 × 360 cm)

2 ADDITIVE AND SUBTRACTIVE RETOUCHING TECHNIQUES

The importance of these manipulations in Ruff's formal strategy can only serve as an early exemplary case and has not been used in itself as a definitive argument for the understanding of the discourse on the digital. But it nevertheless reveals a noteworthy tendency that shows to which extent this discourse is not so much related to technological preconditions, but rather depends upon the verisimilitude of an image: does the image *appear* authentic, or does it look manipulated? A major consequence emerges from the comparison of the discourse on post-photography and the discourse on the digital in Düsseldorf. It shows the reliance on visual parameters to approach digital photography critically: the opposition between verisimilitude and manipulated imageries occupies a key role in the constitution of the discourse discussing the digital. Interestingly, this antagonism not only opposes Düsseldorf and post-photography but is also present among some of the Bechers' students. It provides productive analytical criteria to understand the approach toward documentary forms. While Ruff's *Häuser* are perceived as documentary *despite* retouching, Gursky's images are considered as such *because* of its use: the confrontation of the subtractive retouching of both photographers reveals this schism, even though the comparison is somehow problematic, as Gursky only uses subtractive processes such as retouching, similar to those in the *Häuser*, in the mid-1990s. This makes comparability in terms of their reception and the technology used problematic, as both sets of images emerge in different contexts. But before the next

chapter's analysis of Gursky's early compositions, which embody a type of images with documentary "value" *because* of their digitalness, we shall address his late 1990s photographs with subtractive retouching in order to highlight similarities to and differences from Ruff's approach. *Rhein I* (1996, Fig. 5), *Rhein II* (1999) and *Library* (1999, Fig. 61) have undergone post-productive interventions similar to *Haus Nr. 1 I* and *Haus Nr. 8 I*. In *Rhein*, every trace of civilization has been removed.[53] *Rhein II* has been extruded[54] horizontally from Rhein (1996), resulting in a bi-chromatic, sober, painterly and anamorphic image, which serves Gursky's tendency to search for frontal, two-dimensional constructions, a central feature of his work, which will be developed later on.[55] While trying to assess to which extent retouching engages with the ability to represent reality would be irrelevant, it seems pertinent to evaluate the role those interventions play in the work process of these two artists. Discourse usually interprets Gursky's compositional strategies as a way to enhance or orient the perception of the depicted object, aiming for the generic instead of the particular. Transformations made with retouching tools clearly aim at converting a particular referent – in this case a river shore in the Ruhr – to a more generic view of a river, technically achieved through the erasing of contextualizing elements. Commenting on the genesis of *Rhein I*, Gursky claims that "[he] wasn't interested in an unusual, possibly picturesque view of the Rhine, but in the most contemporary possible view of it. Paradoxically, this view of the Rhine cannot be obtained in situ; a fictitious construction was required to provide an accurate image of a modern river."

Interestingly, such selection processes predate the actual use of digital technologies, as an example analyzed by Martin Henschel shows, using subtractive techniques even before digitally retouching images: the early *Müllheim an der Ruhr, Angler* shows a wild part of the Ruhr River, with only a bridge and some fishermen as sign of civilization. The picture, often associated with romanticism or historical painting, is in fact the photographic depiction of a very small section of the river shore, which remains natural. The landscape depicted in the image is surrounded by docks, a hydroelectric power station and housing estates. What matters to Gursky, according to Herschel, is less the reality of that particular landscape than the various memories and art historical sources it might refer to.[56]

53 Stefan Beyst, "Andreas Gursky. From a Spirit's Eye View," op. cit.

54 In a program such as Adobe Photoshop an image can easily be stretched in one direction, creating an elongated version of the original image. An image depicting a square would simply produce an output with a rectangle in a stretched verison.

55 Although *Rhein II* is often mentioned in articles in relationship with digital retouching, its strictly geometrical relationship with *Rhein I* has never been stated. Matthew Biro for example mentions the removing of elements without mentioning *Rhein I*, Alix Ohlin supposes that the image is a composite made with several river views. See Matthew Biro, "From Analogue to Digital Photography. Bernd and Hilla Becher and Andreas Gursky," op. cit., p. 358 and Alix Ohlin, "Andreas Gursky and the Contemporary Sublime," op. cit., p. 29.

56 See Martin Henschel, "The Totality of the World, Viewed in Its Component Forms. Andreas Gursky's Photographs 1980 to 2008," in *Andreas Gursky. Works 80 – 08*, exhibition catalogue (Kunstmuseen Krefeld, Moderna Museet Stockholm, Vancouver Art Gallery, 2008 – 2009), Ostfildern, Hatje Cantz, 2009, p. 22 – 24.

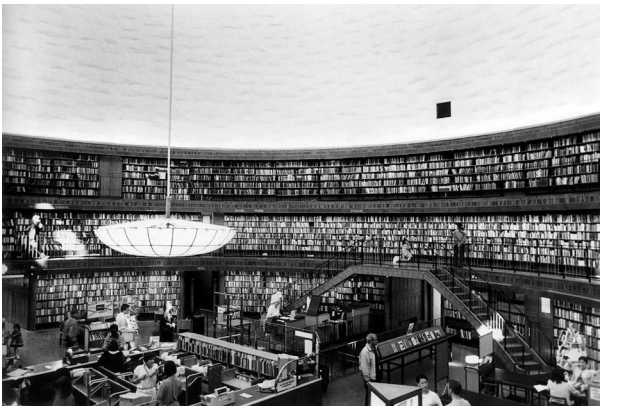

Fig. 62: Candida Höfer, *Stadsbiblioteket Stockholm*, 1993 (38 × 57 cm)

While the simplification process differs from the typological approach of the Bechers – there is no explicit comparative component in Gursky's work –, it nevertheless produces a similar des-individualization, producing nonspecific subjects. While formally the erasing of picture elements in *Rhein I* and *Rhein II* are subordinated to Gursky's generic formal constructions, they also fundamentally serve as vectors for a different kind of documentation addressing the generic.[57] In *Library* (1999, Fig. 61), in which the staircases or the counters of the Stadsbiblioteket Stockholm have been removed and the floor substituted with the reflection of the shelving,[58] a seductive visual impact is clearly produced, but the picture also constructs a new meaning, confronting a decontextualized generic photograph with a specific caption. The particular library is illustrated with a stripped-down building, which embodies a type-form, rather than an actual building. But while the Bechers induce a comparative mechanism juxtaposing similar objects, Gursky's approach rather constructs a generic overview of the subjects he is interested in, technically realized using retouching tools. In the work of the Bechers, the single-image autonomization, or its emphasis on type-images, is achieved through its inscription in a typological grid. In *Rhein I* and *Rhein II*, the same effect will be achieved by stripping down the image to a small amount of graphically strong elements, improving the visual impact and legibility of his tableaus, and by confronting it with a preconceived vision of that image. The potential of the digital tools thus compensates, so to speak, for the absence of comparative mechanisms across several images. Gursky's photographs, while gaining visual impact through their very large formats, retrieve the Bechers' strategies, not by arranging the depiction of an object by photographic means (i.e., frontal depiction of industrial buildings) but by intervening in the image itself.

57 Andreas Gursky quoted in Annelie Lütgens, "Shrines and Ornaments. A Look into the Display Cabinet," in *Andreas Gursky: Fotografien 1994 – 1998*, exhibition catalogue (Kunstmuseum Wolfsburg, 1998), Ostfildern, Cantz, 1998, p. 9.

58 Ibid.

Fig. 63: Andreas Bretz, illustration for Hans Onkelbach's article, "Gursky und sein Bild vom Rhein," in the *Rheinische Post Online*, Düsseldorf, 15.11.2011

In terms of referentiality, Gursky also marks a shift with the Bechers' original endeavor (i.e., documentation of buildings in specific places at a set moment in time), approaching their more conceptual effort (i.e., anonymous sculptures). He doesn't intend to document that particular library or that particular river shore. Gursky himself stated – and this stance is often endorsed by scholars[59] – that he aims to show prototypal environments, oscillating between the general and the particular, the macroscopic and the microscopic, "idealization and richness of detail," a tension Bernd Stiegler interprets as the ever-recurring theme of "photography which sees more or which sees less than the eye."[60] The tension between those two poles, symptomatic of the history of photography and of the reception of digital technologies in photography, leads Stiegler to the conclusion that the strength of Gursky's work lies in a non-partisan recycling of the recurring topoï of the history of photography, an avowedly new critical stance. If the *Häuser* and Gursky's images both express the articulation between generic and particular – a variable established in the Düsseldorf context by the Bechers' typological constructions –, the fundamental difference between them is that they are achieved by Gursky chiefly through digital manipulation. The generic only exists in his photographs through their retouching, while in Ruff's series it is primarily achieved through serial constructions. Clearly, the articulation of the particular and the generic occurs in the *Häuser* series *despite* the retouching, which is not necessary. In Gursky's case, the dialectic only exists *because* of the retouching. He does indeed erase picture elements, but only in order to build an image which would otherwise be impossible to realize. Ruff's retouching, on the other hand, entails minor interventions such as color correction or reframing the image, while Gursky's visual strategy is governed by the formal implications of such tools, which

59 A common interpretation of his work is the idea of a generic documentation of the globalized world.
60 Bernd Stiegler, "Digitale Photographie als epistemologischer Bruch und historische Wende," op. cit., p. 113.

thus acquire a much greater importance. But considering the fact that this comparison is somehow anachronistic, the earlier use of digital tools in Gursky's work ought to be examined, in both their formal and conceptual implications, and through their contemporary reception, in order to understand the genesis of such practice.

B
DIGITAL STITCHING

1 ANDREAS GURSKY'S EXPANDED REALITIES

An oriented reception

"Although he has occasionally used a computer to help him make images, this is in order only to recreate an image that he has seen and not to create something unseeable. Computers can knit together an image too panoramic for a camera lens to capture." Fiona Bradley's statement in the introduction of the catalogue for the 1995 exhibition *Andreas Gursky, Images* at the Tate Gallery Liverpool in 1995[61] clearly shows a rather common historiographical tendency, which interprets Gursky's digital imaging techniques as mechanisms that allow him to show a certain pre-existing reality impossible to capture with a conventional photographic device, using a tool in order to transfer a mental into a physical image. Incidentally, this statement suggests that Gursky does not circumvent the conventional idea of photographic depiction, as the truth claim of the photographic is not impaired. "The [digital] montage doesn't falsify anything," Martin Henschel further claims,[62] in an important monograph on the artist, introducing the idea of falsification, unavoidably attached to the notion of photographic truth. Stefan Gronert, one of the specialists of Düsseldorf photography, concurrently argues in an exhibition catalogue on Thomas Demand, Edward Ruscha and Andreas Gursky, that the Düsseldorf photographer guides the viewer's gaze toward something that is pre-existent in

61 *Andreas Gursky. Images*, exhibition catalogue (Tate Gallery Liverpool, 1995), London, Tate Gallery Publications, 1995, p. 10.

62 Martin Henschel, "Das weltganze in seinen einzelnen Formen betrachtet. Andreas Gursky's Fotografien 1980 bis 2008," in Martin Henschel (ed.), *Andreas Gursky, Works 80 – 08*, p. 17.

the image, something Gursky actually sees but is unable to reproduce technically with one single image, rather than constructing something virtual.[63] He does not create or construct a new plausible reality but merely erases and highlights aspects in the image that he considers noteworthy, filtering visual data rather than creating it.

However, these positions reflect a common critical discourse connected to exhibition projects and catalogues. As Anne-Marie Bonnet notices, his work has predominantly been handled critically, endorsing the artist's own interpretation, rather than scientifically.[64] Consequently, there would be a commonly shared consensus about his oeuvre, which is hardly ever systematically analyzed or questioned. As an example, she summarizes Peter Galassi's almost epitomic analysis in the MoMA exhibition catalogue of 2001,[65] whose main articulation we are paraphrasing here: the child of photographers, a student of the Bechers, disentanglement from their inheritance, spontaneous then increasingly conceptual work, always distant from the photographed object, digital since 1992, interest not in the individual but in mankind in its social and political anchoring (e.g., globalization), states himself to be not particularly articulated or art historically educated, an aspect which arguably isn't important in his work. Starting from these premises, Bonnet interrogates in her article the commonly shared idea that referentiality to the depicted object, despite an obviously personal interpretation, has always played a central role in his work, which allegedly "questions the documentary" and is, as such, "linked to the tradition of the so-called Düsseldorf School."[66] Analyzing the writing of major scholars about his work, Bonnet stresses the fact that Gursky's relationship to the "real," despite his explicitly pictorial approach – Gursky as his commentators admit an important painterly element[67] –, has always been acknowledged. "It's about the experience of the world, whose foundation is the vision," Thomas Weski exemplarily argues.[68] Bonnet's essay reveals an interesting historiographical tendency that predominantly analyzed Gursky in terms of a balanced interaction between painting and photography. This interaction is addressed as a paragon – photography seeking legitimation through its relationship to painting – and as an intermedial system of representation, defined by

63 Stefan Gronert (ed.), "Reality is Not Totally Real," in *Grosse Illusionen. Thomas Demand, Andreas Gursky, Edward Ruscha*, exhibition catalogue (Kunstmuseum Bonn, 1999/Museum of Contemporary Art, Miami, 1999), Cologne, Wienand, 1999, p. 17. Gronert claims that Gursky, as opposed to Jeff Wall or Dieter Huber, doesn't construct a reality which is not pre-existent [ausserbildliche Realität], as if the use of indexical photographic fragments of the same object – for example the building in *Paris, Montparnasse* – were a token for an objective depiction. His apparently non-dogmatic interpretation of the concept of indexicality actually shows to which extent his analysis derives from a discursive and contextual preconception, which reads Düsseldorf photography as necessarily connected to the objectivist paradigm. A counter-example would be Matthias Winzen's concept of "credible invention of reality," in Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit.

64 Anne-Marie Bonnet, "'Pimp my world.' Zu Gursky's Bilderwelt zwischen Malerei und Photographie, Kunst und Welt," *Frame #2,* op. cit., p. 108.

65 Ibid., footnote 22, p. 109.

66 Ibid., p. 94.

67 Ibid., footnote 15 and 16, p. 92.

68 Thomas Weski, "Der privilegierte Blick," in *Andreas Gursky*, exhibition catalogue (Haus der Kunst, Munich, 2007), Cologne, Snoeck, 2007, p. 17. Quoted in ibid., p. 95, footnote 28.

the tension between depiction and construction. If in this reading both media are considered, it seems that the parameters usually associated with photography – the alleged privileged relationship to reality – are more important than those of painting, which supposedly serve the photographic medium. While Peter Galassi analyses Gursky's influences – for example, Jackson Pollock's *all over* or Gerhard Richter's grid patterns of the *Farbfelder* series, which seem to have been literally translated –, the photographic always plays a central role. One consequence of this dialectical interpretation is that painterly processes are often opposed to a certain extent to photography and sometimes even called anti-photographic.[69] The tension between image and depiction is emphasized, rather than exploring the inherent logic of the images, the mechanisms through which photographic fragments are embedded into a constructive visual approach or, for instance, the role of large formats or frontal constructions in relation to this alleged ability of documentation. A logical consequence of these approaches lies in a biased exploration of the role of the digital in his work. Often seen as a simple retouching tool or as a means to unveil what the eye can see but the camera can't capture, the digital as a process that structures his production in a yet to be delineated reconfiguration of the photographic remains underexplored. As stated in the introduction of this study, the work of Gursky and his fellow Becher students, whose practices involve digital post-production, are often interpreted from the perspective of the objectivist paradigm they are commonly linked to. It is obviously unproductive to reflect upon the relationship between indexicality and the definition of what an authentic or objective depiction might be. But the discourse produced by those associations reveals interesting historiographical and critical tendencies. For instance, it is intriguing to acknowledge how digital manipulation in their work has been perceived. Particularly in the 1990s, but also later, Düsseldorf photography seems to be necessarily connected, somehow, to the reality it represents, more than contemporary photographers such as Jeff Wall, for example. In the above-mentioned text, Stefan Gronert even uses the case of Wall as a counterexample, insisting on the fact that he builds credible images by combining several visual fragments, stitching together elements to produce an almost coherent, "authentic" image of reality that does not actually exist as such. Gursky on the other hand supposedly reveals hidden elements that are present in the image. He embodies an approach that surpasses the ability of conventional reproduction. That very position, combined with the distance from its subjects that his images often convey, has often led critics to compare him to a God-like figure.

69 For example Stefan Beyst, "Andreas Gursky. From a Spirit's Eye View," op. cit. In this case the terminology proves problematic, as "anti-photography" has been used by Nancy Foote to describe to work of the New Topographics photographers. See Nancy Foote, "The Anti-Photographers," *Artforum*, Vol. 15, No. 1, September 1976, reprinted in Douglas Fogle (ed.), *The Last Picture Show. Artists Using Photography. 1960 – 1982*, op. cit.

Fig. 64: Andreas Gursky, *Gardasee*, 1986/1993 (39 × 120 cm)

Clearly, even if the never-ending debate about the depiction of the real in photography seems as such obsolete and unproductive, the fact that those two examples – Gursky and Wall – have known a very dissimilar reception, has to be emphasized and further explored.[70] Basically, Wall's images are supposedly disconnected from what they represent, interpreted as the enactment of a meta-discursive strategy, which addresses photography as an apparatus.[71] Gursky's work, on the other hand, seems to be almost systematically connected to the documentation of the globalized world, in which digital retouching is only a tool to represent more truthfully, expanding the limitations of the camera. Obviously, more nuanced views of documentary forms have recently emerged, which are not solely based on indexical depictions and do not reject the idea of construction. The exhibition *Click Doubleclick: The Documentary Factor* curated by Thomas Weski for the Haus der Kunst in Munich in 2006[72] considers documentary in the late twentieth and early twenty-first centuries, acknowledging new forms of documentation, based on perception or image circulation. The curatorial stance consists in a revaluation of documentary through its extrication from strict indexical representational forms. In that respect, Gursky or Wall's work is equally considered as an artistic interpretation of the contemporary world – both photographers are displayed in the exhibition. The recent exhibition at Le BAL in Paris curated by David Campany and Diane Dufour, *Anonymes. L'Amérique sans nom: Photographie et cinéma*, also shows Wall's images as a documentary form. The exhibition's stance is to present figures commonly associated with documentary practices – Walker Evans or Lewis Baltz – alongside photographers and filmmakers with more experimental approaches such as Jeff Wall or photographers using unusual source material such as Doug Rickard, who uses Google Streetview images. The exhibition highlights the idea that the ability

70 The use of digital retouching tools in Wall's work is often either discussed as a given fact (e.g., Paul O'Brien, "Jeff Wall, Irish Museum of Modern Art, Dublin, October-January 1994," *Circa Art Magazine*, No. 67, Spring 1994 or Michael Fried, "Jeff Wall, Wittgenstein and the Everyday Life," *Critical Inquiry*, Vol. 33, No. 3, 2007) or addressed through the "uncanniness" it produces (e.g., Laura Mulvey, "A Sudden Gust of Wind (after Hokusai). From After to Before the Photograph," *Oxford Art Journal*, Vol. 30, No. 1, 2007).

71 See for example Thierry de Duve, "The Mainstream and the Crooked Path," in *Jeff Wall*, London, Phaidon, 1996.

72 Thomas Weski (ed.), *Click Doubleclick. The Documentary Factor*, exhibition catalogue (Haus der Kunst, Munich), Cologne, Walter König, 2006.

to document is not necessarily connected with the use of a non-altered image, but rather derives from a produced discourse – by artists or curators –, converging with the recent art historical position addressing the documentary through its discursive specificities. Much more than the actual technical interventions in their images, it is the produced discourse that defines the reception of the images, as seems to have been the case for Gursky and Wall's work until recently, one being labeled documentary, the other conceptual.[73]

Fig. 65: Andreas Gursky, *La Défense, Panorama*, triptych/digital composite, 1987/1993 (21.5 × 78.8 cm & 63 × 150 cm)

Despite an obvious classification of Gursky in a documentary context, his debt to painting and minimal art is also commonly stressed. Gerda Breuer, for instance, mentions his relationship to Caspar David Friederich, Dan Flavin, Barnett Newman and Donald Judd.[74] But even in those approaches, the idea that Gursky as documentarian prevails, independent of tools, technique or artistic strategies. Breuer mentions him, saying that he selects images from the "tide with which we are inundated" to produce "autonomous variants" of those "visual experiments,"[75] which suggests that he reflects upon the way the formalization of the world is perceived. According to the scholar, Gursky "manipulate(s) his pictures digitally, in order to focus on the elements of perception that interest him most."[76]

In order to understand the role of these practices, which, as we have seen, are interpreted not as manipulative interventions but as legitimate processes, it is necessary to evaluate their implication in Gursky's image composition strategies and to assess their relationship to photographic depiction and to painterly processes. One issue that seems central to the understanding of Gursky's reception, is the

73 A current categorization of Wall's work suggests to label the staged photographs "cinematographic," while the more recent photographs, which have not been staged or retouched, are called "documentary." See Theodora Vischer and Heidi Naef (ed.), *Jeff Wall. Catalogue Raisonné. 1978 – 2004*, Basel and Göttingen, Schaulager and Steidl, 2005. Jeff Wall himself further uses the concept "near documentary," appeared in the early 2000s and which focuses on experience. See Estelle Blaschke, "Jeff Wall. 'Near Documentary.' Proche de l'image documentaire," *Conserveries mémorielles*, No. 6, 2009.

74 Gerda Breuer, "Pictures of Paradox. The Photographs of Andreas Gursky," in Michael Mack (ed.), *Reconstructing Space. Architecture in Recent German Photography*, London, Architectural Association, 1999.

75 Interview with Andreas Gursky, in *Andreas Gursky. 1994 – 1998*, exhibition catalogue (Kunstmuseum Wolfsburg/Fotomuseum Winterthur/Serpentine Gallery, London/Scottish National Gallery of Modern Art, Edinburgh/Castello di Rivoli, Museo d'arte contemporanea, Centro Cultural, 1998), Kunstmuseum Wolfsburg, 1998, quoted in Gerda Breuer, op. cit., p. 25.

76 Ibid., p. 19.

relationship of digital retouching with either photographic or painterly aspects of his work – if they can be broken down schematically – in order to understand to which extent the reception is rather based on the reading of visual proprieties of his work (e.g., "documentary" style versus idealization) or, rather, on a discursive context, such as the documentary tradition of Düsseldorf photography he is associated with. As at the time Gursky's digital montages combine multiple images without using actual retouching as Ruff does, it has to be asked if this variant of digital post-production is considered more admissible than subtractive retouching[77] and if it rather ought to be connected with the photographic (as a way of improving representation) or as an outcome of a confrontation with painting (as a formal engagement with compositional issues and art historical sources).

Fig. 66: Andreas Gursky, *Paris, La Défense, Filmarbeiten,* 1987

Toward two-dimensional images

Gursky's modus operandi regarding digital manipulations in the early 1990s consists of rather simple manipulations. They will only become increasingly complex at the end of the decade. *La Défense, Panorama* (1993), one of his first composites, is a panoramic image resulting from the horizontal combination of three photographs. The original pictures were shot in 1987 in the western suburbs of Paris. Originally a triptych (three c-prints mounted on cardboard, see Fig. 65), the images were assembled in 1993, at a time when Gursky was experimenting with digital retouching tools,[78] which often leads to an unclear or erroneous determination of the production year, the format or even its assimilation with another photograph, *Paris, La Défense, Filmarbeiten* (1987, see Fig. 66).[79] The reception of the architectural study with

77 Even if, of course, Ruff's series is still considered "documentary."

78 Peter Galassi, "*Gursky's World*," in Peter Galassi (ed.), *Andreas Gursky*, op. cit., 2001, p. 25.

79 The image of a film shooting has also been taken at *la Défense*, probably at the same time as *La Défense*. While bearing a clear discrete title, is it often wrongfully tagged *La Défense*, which further complicates the understanding of the genesis of the digital montage from 1993.

strong perspectival lines is quite particular. Despite being mentioned by Peter Galassi, *La Défense* is not in the catalogue of the MoMA exhibition (2001),[80] nor in most major catalogues, such as Munich (2007), Basel (2008) or Krefeld (2009). The moderate interest in that particular photograph is also reflected in the price of the various editions[81] and the numerous errors in identification or size. In 1993, Gursky constructs several images similarly, while formal differences are important. The *Gardasee* panorama, for example, was created the same year with shots taken in 1986. But it is especially the famous *Paris, Montparnasse* (1993) that provides insight into Gursky's formal interrogations of the time, especially if compared to *La Défense*. Gursky's largest print at the time, with a frame size of 180 by 350 centimenters,[82] *Paris, Montparnasse* possesses similar technical specifications to the two aforementioned images. The image results from the horizontal stitching of two photographs. But apart from that particular technical feature, *Paris, Montparnasse* also reflects another important transformation in Gursky's image construction strategies. *La Défense* and the *Lake Garda* photographs show an attempt to embrace a panoramic effect, producing an image not to be achieved with a single shot and using digital tools. Especially *La Défense* seems unrealistic, as such a wide panoramic view and its strictly geometrical distortion cannot be perceived as a whole by the beholder. And that very paradox – increasing the informational or documentary value, while "losing" the viewer within the image – is historically associated with the panorama:[83] "In conventional photography, the look extends into the very depth of what is framed, whereas in panoramic photography, it functions within a continuum, or an extension."[84] The shift from *La Défense* to *Paris, Montparnasse* thus reveals several aspects that will become a major preoccupation in Gursky's work. On the one side, there is an interest in human perception: Gursky aims to construct a transparent vision that collides with human sight. But at the same time and somehow paradoxically, Gursky adopts two-dimensional image constructions in which the depicted objects converge with the surface of the increasingly large image. Not only does he build progressively

80 Peter Galassi (ed.), *Andreas Gursky*, op. cit.

81 Christies London has sold 1 AP for 30,440 USD in 2007; Sotheby's New York has sold 1 AP for 25,000 USD in 2009, while several prints of the artists have recently reached seven-digit figures. See http://www.christies.com/LotFinder/lot_details.aspx?IntObjectID=5021871, accessed on July 11 2018 and http://www.sothebys.com/fr/catalogues/ecatalogue. html/2009/contem...#/r=/fr/ecat.Fhtml.N08523.html+r.m=/fr/ecat.lot.N08523.html/190/, accessed on July 19, 2012 (page now offline).

82 Peter Galassi, "*Gursky's World*," op. cit., p. 33. The height corresponds to the largest available papers at the time. See for example Michael Diers, "Bilder nach (Film-) Bildern oder Andreas Gursky und die Interferenzen von Fotografie und Film," *Zeitschrift für Kunstgeschichte*, Vol. 33, No. 3, 2003, footnote 20, p. 398.

83 According to Joachim Bonnemaison, who defines four types of panoramic images, Gursky's tableaus would be panoramas. Bonnemaison defines the types according to their technical capturing protocol: panorama views (one image taken with one fixed lens), panoramas (composite views with several images), panoramics (one image taken with one rotating lens, covering up to 140 degrees) and panoptics (one image taken with one rotating lens, covering 360 degrees or more). "La photographie panoramique dans la collection Bonnemaison. Entretien avec Joachim Bonnemaison par Régis Durand," in *Panoramas, Collection Bonnemaison. Photographies 1850 – 1950*, Arles, Rencontres Internationales de la Photographie/Acte Sud, 1989, p. 18.

84 Joachim Bonnemaison, ibid., p. 25.

plane images for compositional purposes, but he also "bends" reality in order to correspond to these formal patterns. That particularity is already present in Thomas Ruff's panoramic *Häuser*, which are systematically frontal. The ambivalent reception of Gursky's work of that period, and particularly the interpretation of specific formal characteristics (frontality, grid patterns and large format) and digital retouching, is thus directly linked to this ambivalence.

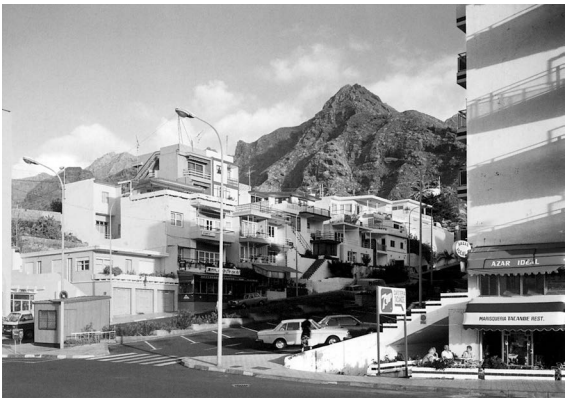

Fig. 67: Andreas Gursky, *Tenerifa, Bajamar*, 1987

The frontal construction characteristic of *Paris, Montparnasse* is central in the work of Bernd and Hilla Becher, in which it constituted one of the numerous parameters of their strict capturing protocol. Its existence was clear in Gursky's early work – the early *Pförtner* series (Fig. 68) relies on a strictly orthogonal composition –, but he somehow abandoned it during that decade. Images with architectural elements, such as *Düsseldorf, Terrace House* (1980), *Liège, Football Players* (1984), *Tenerifa, Bajamar* (1987, Fig. 67) or *Madrid* (1988), rather show a tendency to apply diagonal constructions. The frontal vantage point, which is commonly connected with Düsseldorf photography, is thus a pattern that doesn't prevail in Gursky's early work of the 1980s, although it is present in some examples. Interestingly, that particular construction, omnipresent in Gursky's recent work – e.g., the *Prada* series (1997), the *99 cent* series (1999 – 2002), the *F1 Pit Stop* series (2007), the *Dubai* series (2007), the *yang* series (2007) and the *Ocean* series (2010) –, appears gradually in the late 1980s and early 1990s, concurrent with digital retouching technologies and large formats. But how are these three aspects connected and how do they address documentary forms?

Several mechanisms play a central role in the shift toward frontal image constructions, which has been mentioned repeatedly in his historiography.[85] In the late 1980s, Gursky seems to seek inspiration in certain art historical models. Peter Galassi has argued that Gursky was chiefly inspired by the model of painting (Gerhard Richter and

85 See for example Peter Galassi, "*Gursky's World*," op. cit.

Jackson Pollock in particular) with which photography seemed in concurrence since the medium had entered the art world in Europe throughout the 1960s and 1970s. This is often interpreted as being connected with large canvas sizes, which since the contact with the Grieger laboratory in Düsseldorf and the development of the Diasec[86] technology rapidly became prevalent among the Becher students. But while the use of increasing sizes of prints in Düsseldorf photography – Gursky's *Cocoon II* (2008) will reach a considerable size of 211 by 506 centimeters – has been interpreted as inherent to "artistic" photography and as the outcome of its dialogue with painting, the account of this history of the large format and its origin has to be nuanced. Jean-François Chevrier[87] – whose definition has been endorsed by various scholars and is commonly quoted in the art historical discourse[88] – connects the large format with painting and emphasizes the legitimization process of photography in the art field, creating the concept of *forme-tableau*. The French scholar stresses the objecthood of the large-format image, "designed and produced for the wall" and physically "confront[ing]" the viewer, creating a spectatorial relationship similar to painting, which "sharply contrasts with the habitual processes of appropriation and projection whereby photographic images are normally received and 'consumed.'"[89] The image is clearly associated with "fine arts." Olivier Lugon, in a historical reconstruction of the genealogy of the uses of large-format photography throughout the twentieth century, undermines that very claim. He shows that it stood throughout the century for mass culture imagery, and he suggests that it wasn't technical innovations or the concurrence with painting that triggered the emergence of the large format in art photography.[90] In the case of Gursky, the image construction itself, in its increasing frontality and the apparent dissolution of the indexical picture elements into sheer plastic elements – a comparison to the graphical structure of Pollock's *all over* has often been made[91] – is central, and the image size seems to be consequential of those formal transformations, as Chevrier argues. But as will be shown subsequently, formats are also deeply connected with the idea of an enhanced documentary representation, a hypothesis for which Lugon provides a rigorous prehistory: photographic prints such as the NECO *Architectural Paintings* distributed in the US in the 1970s and used for the *Signs of Life* (1976) exhibition, a collaboration of architects Robert Venturi, Denise Scott

86 Invented in 1969 by Heinz Sovilla-Brulhart, the mounting technique permanently joining a print with an acrylic glass was used under exclusive licencing by the Grieger Lab, Düsseldorf from 1972 until the licence expired in 2009. See Sylvie Pénichon and Martin Jürgens, "Two Finishing Techniques for Contemporary Photography," *Topics in Photographic Preservation*, Vol. 9, 2001. Available at https://worldwide.espacenet.com/publicationDetails/biblio?CC=WO&NR=2012034709A2&KC=A2&FT=D, accessed on April 10, 2019.

87 See especially Jean-François Chevrier, "The Adventures of the Picture Form in the History of Photography," op. cit.

88 For example in Michael Fried, *Why Photography as Art Matters as Never Before*, op. cit.

89 Jean-François Chevrier, "The Adventures of the Picture Form in the History of Photography," op. cit., p. 116.

90 Olivier Lugon, "Avant la 'forme tableau,'" *Etudes photographique*, No. 25, May 2010. The author also surveys various inflections of Chevrier's concept from the late 1980s until today.

91 For example in Peter Galassi, "*Gursky's World*," op. cit.

Brown and Steven Izenour with photographer Stephen Shore, not only allowed the printing of very large formats but also guaranteed "great graduation, stability, an incomparable piqué" and overall quality, even increasing with size.[92] In this context, large formats are directly connected with the idea of media and advertising,[93] while technically possessing an improved "documentary" ability, which disputes Chevrier's argument. While both approaches are not incompatible, they are symptomatic of diverging art historical positions that are essential to the assessment of Gursky's work.

Fig. 68: Andreas Gursky, *Pförtner, Passkontrolle*, 1982

In order to understand the dialectical relation between these two poles (photography vs. painting), we shall evaluate the formal dialogue between three and two dimensions. Understanding this might in a further step allow us to make explicit the correlation between the formal transformations and the two (schematically drawn) historiographical positions Gursky is apprehended by. Formally, the shift appears in four types of non-digitally manipulated images in his oeuvre, at that time rather untypical, which already suggest later bi-dimensional, frontal constructions: the "abstract" pictures, the bird's-eye views, the stripes pictures and, in a subsequent reflection upon the concept, the photographs depicting famous paintings. At first, Gursky's "abstract" pictures – for example, *Untitled I* (1993), which depicts a carpet,[94] the almost abstract sunset of *Untitled II* (1993) or the indefinite soil structure of *Untitled III* (1996, Fig. 69) – clearly show a dissociation from photography as a figurative medium and of the image as a three-dimensional construction (in that it renders an image

92 That sharpness increased with size was one of Stephen Shore and Steven Izenour's publicity arguments. Olivier Lugon, "Avant la 'forme tableau,'" op. cit.

93 Ibid.

94 The image of the carpet was taken in the Kunsthalle Düsselforf, which formally and as a reference suggests a connection to painting and the art world. See Marie Luise Syring, "Wo liegt 'ohne Titel?': Von Orten und Nicht-Orten in Gursky-Fotografie," in Marie Luise Syring (ed.), *Andreas Gursky, Fotografien. 1984 bis heute*, exhibition catalogue (Kunsthalle, Düsseldorf, 1998), Munich, Schirmer/Mosel, 1998, p. 5.

based on a central perspective). There isn't any clearly recognizable element, as they only show abstract patterns or colors. While not frontal, they clearly constitute an important step toward two-dimensional image construction strategies, in this case through framing and choice of subject, rather than through frontal constructions. Even though Gursky has completed very few of those images, all tagged "Untitled," they interestingly validate a tendency. Obviously, this doesn't serve as evidence in itself, but the conjunction of several analytical criteria corroborates this shift.

Fig. 69: Andreas Gursky, *Untitled III*, 1996 (186 × 222 cm)

The bird's-eye views, even though they are totally different visually and strategically, achieve a similar result. *Swimming Pool, Tenerifa* (1987, Fig. 70), for example, has almost been shot from a bird's-eye perspective, and the image surface thus roughly corresponds to the surface of the swimming pool it depicts. The uncommon viewpoint obviously recalls avant-garde experiments in which toppling the perspective creates a de-realizing effect, transforming the depicted object into sheer forms. For example, Lazlo Moholy-Nagy's experiments aimed to deconstruct the bi-dimensional photograph into strict geometrical picture elements and thus produced almost abstract images. If Gursky's strategies bear similarities, the fact that he uses wider angles and that his color images retain a higher degree of representativeness – the connection to the depictured object remains – rather creates an oscillation between a colored *all over* image and a photograph of people in a swimming pool,[95] incidentally exemplifying Wittgenstein's concept of *Aspektwechsel*.[96]

95 Incidentally an effect that doesn't work with a black and white reproduction.

96 *Aspektwechsel* is the function exemplified by Wittgenstein with his famous rabbit-duck drawing, which aims to address the switch operated by the brain when looking at images, which potentially bear two possible interpretations. See for example Thorsten Jantschek, "Bemerkungen zum Begriff des Sehen-als," in Ralf Konersmann, *Kritik des Sehens*, Leipzig, Suhrkamp, 1997.

Fig. 70: Andreas Gursky, *Swimming Pool, Tenerifa*, 1987 (107.5 × 131 cm)

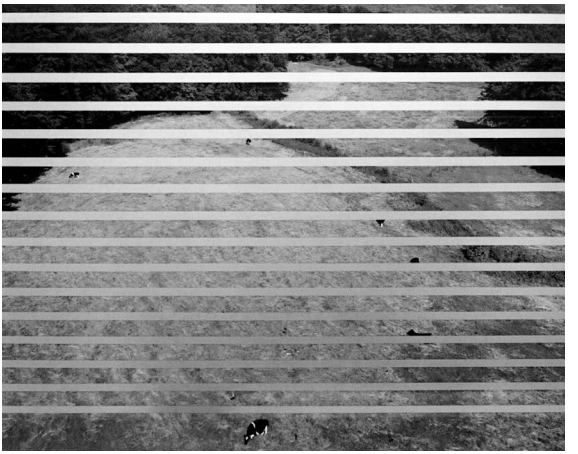

Fig. 71: Andreas Gursky, *Highway, Mettmann*, 1993 (186 × 226 cm)

Here again, while retaining the function of the photograph to represent, Gursky creates an almost abstract, painterly object, enacting the tension between the image as construction and the image as trace. A similar effect is achieved in the diptych *Cairo* (1992, Fig. 74), where an almost zenithal shot of traffic chaos in the Egyptian capital oscillates between abstract and figurative. The image is taken from a considerable distance, which produces picture elements small enough – cars and wandering people – that they could be perceived as abstract shapes and forms. But the fact that the image is not entirely orthogonal allows the viewer to see the side of the cars and buses and thus permits a certain level of recognition, increased by the considerable size of the prints (165 by 200 centimeters each). In the museum context, the movement of the viewers thus becomes an inherent characteristic of the dissolution or recognition of the depictured scene. The

back and forth movement triggered by Gursky, the tension he creates between both modes of representation, shows the importance of the phenomenon, and thus considers not only the image as autonomous representation, but also the image as a physical and contextual object, which seems to validate Chevrier's claim.

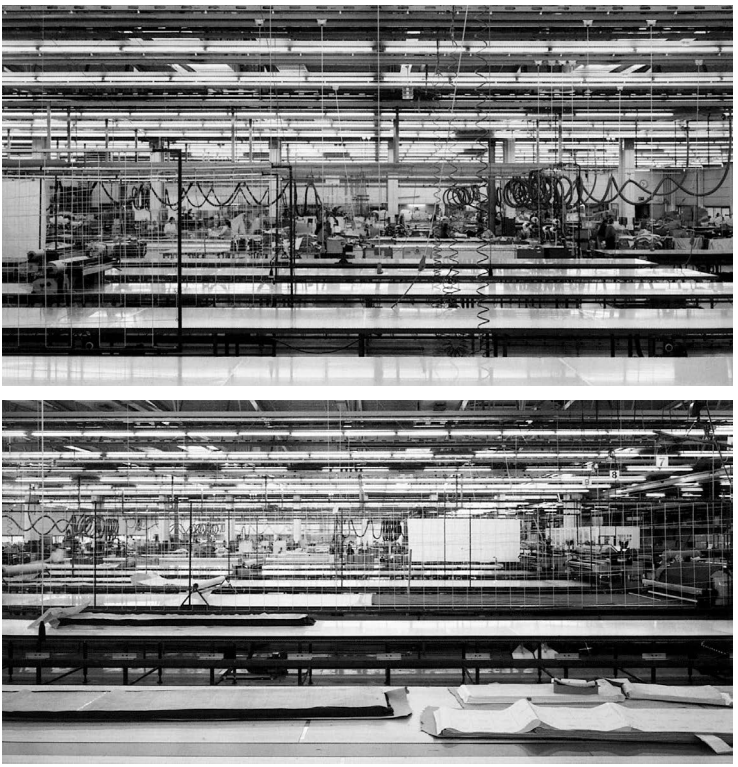

Fig. 72: Andreas Gursky, *Schiesser, Rodolfzell* (diptych), 1991 (165 × 276 cm each)

In that period, various other images emphasize Gursky's formal interest as regards this shift toward two-dimensional constructions. The rather unique *Highway, Mettmann* (1993, Fig. 71) undermines the depicting power of the image by superimposing a horizontal pattern on a landscape – in fact, a highway barrier through which the underlying field is photographed – which decomposes the image into indeterminate horizontal stripes. While cows and grassland are still visible and recognizable, the image seems to render not a picture of a field, but a picture of cutout stripes of a photograph, stressing the physical and figurative condition of the image *as* image. The diptych *Schiesser, Rodolfzell* (1991, Fig. 72), formed by two images of the interior of a fabric factory, instigates a similar frontal and horizontal construction. Eighty percent of the image is built upon white, gray and black stripes, which stratify the image horizontally. Tables and electric structures supporting the lamps cross the image horizontally, parallel to the (theoretical) horizon. While a single image already bears an abstract component,

the fact that the horizon in the diptych is set on different levels and that the perspective is more or less steep enforces the abstract effect, since the euclidian spaces of both images cannot be easily connected. While numerous factory shots still are non-frontal at the time, Gursky here clearly begins to develop a pattern, central in his later work. The formal construction that his images are built upon converges with the depicted reality, merging both into a two-dimensional image.

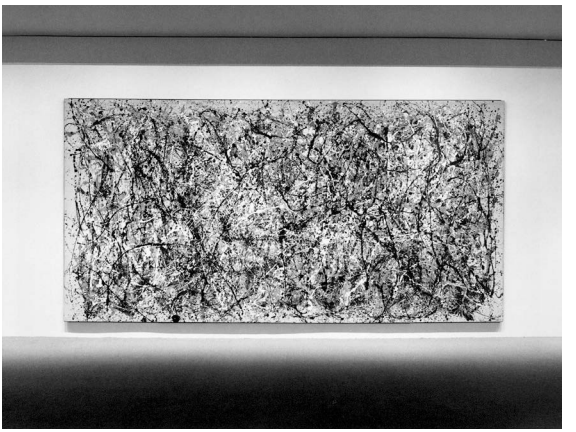

Fig. 73: Andreas Gursky, *Untitled VI*, 1997 (186 × 239 cm)

If more anecdotic, the 1997 reproduction of a Pollock all-over painting at the Museum of Modern Art in New York, *Untitled VI* (Fig. 73), almost ironically comments on or makes explicit his relationship to painting and the two-dimensional image. Gursky, rather than framing only the painting or showing parts of it,[97] locates the Pollock in the three-dimensional museum space and then compresses it again into his own photograph. The gradient of the floor gradually dissolves the wall into the floor, as the transversal patterns of the ceiling and the upper part of the wall merge both together. In the picture space, the canvas is rejected in the background, creating a distance from painting as a medium,[98] activating once again the never-ending quarrel for prevalence in the paragon of the arts. In an extreme and artificial convergence of the two-dimensional painting and the three-dimensional museum space, Gursky produces an *all over* structure that seems to overtly, and maybe naively, state his triumph over painting.[99]

97 As for example in *Untitled X* (1999) or *Untitled XI* (1999).

98 Anne-Marie Bonnet, "'Pimp my world.' Zu Gurskys Bilderwelt zwischen Malerei und Photographie, Kunst und Welt," op. cit., p. 90.

99 The difference with *Turner Collection* (1995), a similar picture representing three Turner paintings in a museum but with homogeneous light is striking.

Fig. 74: Andreas Gursky, *Cairo*, 1992 (129.5 × 154.5 cm)

These four types of images, through various strategies, articulate Gursky's tendency to search for two-dimensional tableaus, which constitute the predominant form of his recent work. After the mid-1990s, such constructions become omnipresent, and, as such, Gursky's work is much stabler and more homogeneous. The "abstract" pictures, the bird's-eye views, the stripes pictures and the photographs depicting paintings correspond to an exploratory period in which Gursky started to experiment with digital tools. Although many are not edited on computers, their formal transformations corroborate Gursky's experiments with the digitally composed panoramic forms. But here again the panorama predates the use of retouching programs, which indicates that Gursky at the time sought for certain compositions, merging the photographic depiction into a two-dimensional image whose formal qualities he aimed to control. Retouching tools clearly play a paramount role in the constitution of the stripped-down type-images such as *Rhein II*, but in the period of the emergence of digital tools in Düsseldorf, computer-assisted composition only constitutes one strategy among others, which will become prevalent only in the mid- to late 1990s. While in the 1990s many of Gursky's photographs maintain conventional form factors, frontal constructions with considerably wide formats will become almost systematic in later years. The very concept of panorama, its implications in terms of spectatorship or "documentary aptitude," and its relationship with mechanisms connected to typological permutations, consequently appear as paradigmatic forms. They encompass Gursky's key strategies and ought therefore to be further explored.

Raster grids and panoramas

A further compositional element of Gursky's reconfiguration of the depiction of the real, in which digital retouching technologies and painterly formal constructions play an increasing role, is the use of grid patterns as "structuring elements" of his compositions.[100] Gerhard Richter's *1024*

100 See Ralf Rugloff, "Photographers Anonymous," in Stefan Gronert (ed.), *Grosse Illusionen. Thomas Demand, Andreas Gursky, Edward Ruscha*, op. cit., p. 95.

Colors (1973) painting has been repeatedly invoked as an inspirational model for Gursky's photography,[101] and it indeed appears to be a possible source of his visual strategy.[102] His images increasingly contain small square shapes or rectangles, which create a frontal structuring grid pattern decomposing the picture. *Paris, Montparnasse* can again be seen as an important step toward those new strategies. While it is always delicate to postulate a coherent evolution, this development is so striking that it ought to be mentioned. There is hardly any occurrence of frontal grid patterns in the 1980s in Gursky's images, except in some of his commercial work.[103] Those geometrical patterns are much more present in frontal architecture photography, such as in the early work of Thomas Ruff, Candida Höfer or in the typologies of the Bechers.[104] The construction of Thomas Ruff's *Häuser* for example clearly shares compositional similarities. The building is represented frontally, crosses the whole image as in *Paris, Montparnasse* and the picture is constructed with three horizontal stripes – the sky, the building and the lawn – none of which really allow a three-dimensional reading. But in the 1980s, grids in Gursky's work can only be found in his commercial work, and the only strictly frontal images are his very early *Pförtner* (1982).

On a technical level, *Haus Nr. 4 II (Ricola, Laufen)* from 1991 constitutes an interesting comparative example,[105] for it is a digital montage of two images, one of the few panoramic images of Ruff's oeuvre and the first he did not photograph himself. Very similar in their construction, the image of the Herzog and de Meuron building of the Ricola factory near Basel and *Paris, Montparnasse* (1993, Fig. 1) also share the double viewpoint, a logical consequence of the contiguous montage of two images. It is only theoretical in Ruff's photograph; since there are only horizontal stripes, the multiplication of the viewpoints cannot be actually seen. This double viewpoint allows, according to Gursky,[106] for a better visibility of the inside of the Parisian apartments and thus a "gain in documentary information."[107] Striking in that remark is once again the propensity of the photographer – and of his commentators – to read his images in the light of discourse related to the documentary. In this case the gain in informational value is equated with the rather hypothetical ability to peek inside the apartments. But even if both images correspond to a nonexistent viewpoint, the perception rather derives from the panoramic format; in Gursky's case, the effect is even increased through the fact that the building exceeds the frame of the picture. The continuum created by the panorama projects the viewer into a contemplative stance, created by the combination of two single images into one tableau. In that respect, the strategy of Gursky is very similar to one mechanism of the Bechers' typologies. If their

101 The first occurrence is Peter Galassi, "*Gursky's World*," op. cit.
102 The recent digital version of *1024 colors* seems even more fitting. See www.gerhardrichter.com.
103 In the MoMA catalogue, Peter Galassi mentions his work for the Osram commercials, published in *Der Stern* (1981–1986). See Peter Galassi, "*Gursky's World*," op. cit., p. 22.
104 The pattern is the most obvious in the *Fachwerkhäuser*.
105 Peter Galassi seems to be the first to draw the parallel between these images from Ruff and Gursky. See Peter Galassi, "*Gursky's World*," op. cit., p. 33 and 38.
106 Andreas Gursky quoted by Peter Galassi. Peter Galassi, "*Gursky's World*," op. cit., p. 38.
107 Ibid.

serial construction adds a comparative value to the images and singles out individual buildings (increased differentiation), the overall typological tableau rather merges every discreet element into a generic type (decreased differentiation). As such, Gursky's panorama re-enacts that very mechanism, the merging of individual images creating an indefinite continuum, structured by the grid pattern. If the overall documentary value could be interpreted as impaired by that phenomenon, the large high-resolution print and the double viewpoint paradoxically produces – at least on a theoretical and discursive level – the opposite.

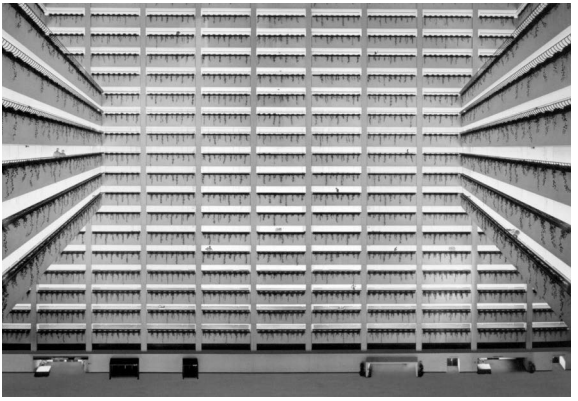

Fig. 75: Andreas Gursky, *Times Square*, 1997 (186 × 250.5 cm)

Appearing in the early 1990s in his work, those grid patterns tend to generalize throughout the decade. Clearly, they benefit from digital montage techniques, which allow the grid to be extended beyond conventional photographic formats. Furthermore, they allow for the building of visual spaces in which perspectival distortion can be controlled. Images such as *Atlanta* (1996) and *Times Square* (1997, Fig. 75) exemplify the frontal representation of an architectural element structured by orthogonal lines – they both show an inside façade with longitudinal rectangles –, which occupies most of the picture, only leaving a stripe on each side. Less extreme than the orthogonal construction of *Paris, Montparnasse*, where only the frontal façade of the building is shown, they nevertheless share the division of the image into numerous, tiny rectangles, parallel to the surface of the photograph. While there are many occurrences of square grid elements – *Avenue of the Americas* (2001), a building façade shot a night, where illuminated windows confronting a black background constitutes an almost programmatic example – Gursky increasingly diversifies the shape of those core elements. Using shoes (e.g., *Prada* series, 1996) or sneakers (*Untitled V,* 1997), individuals in his mass gatherings pictures (e.g., *May Day III*, 1998, or *Chicago Board of Trade*, 1999), cows (e.g., *Greeley*, 2002), shadows of stones (e.g., *Untitled III*, 1996), trash (e.g., *Untitled XIII*, 2002) or abstract shapes (e.g., *Paris, PCF*, 2002), Gursky decomposes the image into elementary particles. Creating a tension between painterly and photographic elements similar to that

in the zenithal pictures, Gursky plays with the line between depiction and graphical composition. *Avenue of the Americas*, for example, would hardly appear as a figurative depiction, if the left and right margins didn't contain buildings where the perspective lines are visible.

The picture elements constitutive of those grids – windows, cars or people – obviously do not derive from Richter's *1024 colors* on the basis of a purely formal confrontation with painting. However, the origin of such a structural, geometrical decomposition of the image, concomitant to increasingly frontal constructions, wide formats and extremely large prints should be evaluated. Obvious preceding visual examples, derived from reproductive print mechanisms come to mind, as much in their use in mainstream media as for artistic strategies (e.g., pop art): offset prints, serigraphy, half-tone processes or rotogravure. The picture element – which entered the vocabulary in its short form "pixel" in the 1960s – constitutes the core element of these printing techniques, but also defines the digital representation of visual data. From the growing interest for mass reproduction techniques in the 1960s and for serial constructions in photography to the omnipresent pixel and computational mechanisms in contemporary imaging systems, there seems to be a deconstructive pattern in the approach toward the visual. Clearly, there seems to be in Gursky's work a proximity to digital mechanisms, but these were expressed visually before digital technologies had in fact become prevalent. His grid structures, in their attempt to segment images into pictures elements, seem inextricably linked with digitalization and represent a cogent approach to the understanding of his formal constructions, and seem to echo the discrete elements of typological constructions. This wider framework, whose resonance is present as much in Gursky's "models" as in his own work, indicates a specific development, addressed earlier, whose interplay with digital technologies, needs to be evaluated. How is the formalization of reality by the Bechers connected with the grid in Gursky's work? How is the single image in a typological construction translated in his tableaus? As the relationship between the Bechers and Gursky has primarily been discussed though the translation of their mechanism into his panoramic formats, the grid ought to be evaluated in that specific context.

Paris, Montparnasse, one of the major images of Gursky's oeuvre, and one of the first to be produced with digital technologies, occupies an important position in the artist's gradual shift toward those frontal image constructions, in which digital technologies play an important role, in particular in relation to formats. The formal development of a new panoramic image ratio directly benefits from these tools and increases the effect of frontality. *Paris, Montparnasse*, like many images and series from the early 1990s on – e.g., *Chicago Board of Trade II* (1999), *Tote Hosen* (2000), the *F1 Pit Stop* series (2007), *Untitled XV* and *Untitled XVI* (2008), the *Cocoon* series (2008) – are extremely wide in comparison to their height. *F1 Pit Stop IV* has a height of 223.4 centimeters to a width of 609 centimeters and a ratio of 2.72. *La Défense* has almost a form factor 4. In comparison, the more common image formats, physically derived from film

or plate sizes, are usually between 1.25 and 1.5. The common large format *Plattenkameras* that Düsseldorf photographers have used, respectively have a ratio of 1.38 (13 × 18 cm) and 1.33 (18 × 24 cm), a format which, as mentioned above, is comparable with a 4/3 TV screen. Gursky creates uncommonly wide pictures by combining several images. He doesn't use cropping – his technique is additive – and thus does not lose information. Considering the considerable size of those prints, a maximal resolution is required to retain the sharpness characteristic of most Düsseldorf photographers.

Until the mid-1990s, a period during which Gursky started to use increasingly panoramic shapes, the use of such formats is uncommon among the Bechers' students. As mentioned earlier, Ruff's panoramic *Häuser* have important width to height ratios. There are some other examples, such as some *Zeitungsfotos* (1990–1991), but their format reflects editorial choices and the images have often been cropped. But most of the time, Düsseldorf photography prints concur with conventional photography-specific formats, while some of Gursky's important series completely undermine the photographic depiction defined by the cameras, in format and size. Despite the technical possibility, most Düsseldorf photographers use established formats derived from form factors connected to their photographic apparatus. There are, of course, numerous examples of "untypical" formats in the history of photographic practices, which either reflect a particular camera format suited to specific needs (e.g., panoramic cameras or particular uses of photographic imagery connected to specific projects (e.g., photomurals). But their use by photographers now assimilated to an artistic context remains occasional until the early 1980s, when a growing number of them adopted these new formats. One of the first occurrences appears in Jeff Wall's work. Some extreme panoramic images[108] materialized at that time, hinting at a new tendency; a series of three images in 1980 (e.g., *The Bridge* or *Steve's Farm, Stevenson*, both roughly 60 × 230 cm), a few in 1987 (e.g., *The Old Prison*, 70 × 228.5 cm), the 1993 meta-panorama *Restoration* (119 × 489.5 cm) or the two 1997 narrative montages *A Partial Account (of events taking place between the hours of 9.35 a.m. and 3.22 p.m., Tuesday, 21 January 1997)*.

What makes these projects interesting is the fact that their image ratio, maybe even more than their considerable size, undermines yet another incredibly stable feature in photographic representation: the correlation between a form factor derived from a capturing device (silver plates, film, etc.) and the printed image. In Wall's case, the photograph results from the juxtaposition of several prints in a light box, a technique very common in his oeuvre. But some images have been stitched together with a computer retrospectively,[109] which suggests that an interest for such constructions predates their digital realization – a confrontation with panoramic models that Gursky might have

108 See Theodora Vischer and Heidi Naef (ed.), *Jeff Wall. Catalogue Raisonné. 1978 – 2004*, Basel/Göttingen, Schaulager/Steidl, 2005.

109 *An Eviction*, for example, was displayed as an analogical montage in 1988 and sewn together digitally in 2004. See Theodora Vischer and Heidi Naef (ed.), *Jeff Wall. Catalogue Raisonné. 1978 – 2004*, op. cit., p. 312.

been directly influenced by.[110] In evaluating his panoramic production of the late 1980s and early 1990s, an interesting shift to that format evolution can be established: while several early panoramas clearly bear a 2D structure (i.e., *Gardasee*), the appearance of a structuring grid in subsequent images enhances and makes explicit Gursky's intent: the *Wechselwirkung* in *Gardasee* alternates between a 2D photograph and what the viewer identifies as a 3D landscape. In *Paris, Montparnasse* it oscillates between a 2D photograph and what the beholder sees as a 2D environment. In forcing the representational spaces into a single surface – the surface plane of the image – Gursky controls the spectator's relationship to the image. That 2D surface – the matrix of that convergence – is geometrically a rectangle and has incidentally been theorized in the history of representation in various forms (as a mirror, as a window, etc.). But a rectangle can hardly appear in a photograph as a structuring element. Gursky thus replaces it with a grid, which makes the surface plane visible. Its subdivision into smaller elements, declinable in all directions, further serves the panoramic effect, as the picture can be stretched out as far as necessary. The interrelation of that grid, its structuring function, the panoramic effect, digital montage techniques and ultimately the documentary value, can best be analyzed through the appraisal of Gursky's most famous and most commented grid image, *Paris, Montparnasse*.

110 Gursky has always admitted a fascination for Wall's work, even emulating his style or compositional patterns. He made numerous images in the style of Jeff Wall, very few of which have been published. See Peter Galassi, "*Gursky's World*," op. cit., p. 19 – 20.

2 "PARIS, MONTPARNASSE:" CONSTRUCTION OF AN ENHANCED REALITY AND IMPROVED VIEWER EXPERIENCE

The relationship between digital image post-production and the truth claim of photography, its "documentary" value, has not only been interpreted in very different terms by the post-photographic discourse and the critical discourse addressing Düsseldorf photography. It seems that there are also considerable differences in the treatment of these issues when considering Thomas Ruff and Andreas Gursky, despite the canonical model, which defines them as necessarily or logically "documentary." In the use of digital tools in their respective work processes and in the discursive field acknowledging their images, sub-categorizations appear, whose origin and implication ought to be thoroughly explored. The documentary discourse, exploring various parameters such as the artist's own position, the particular role of digital post-productive operations, formal construction in relation to the depicted imagery, and the implications of work titles or serial compositions, has constructed diverging models in which the digital plays – this is a schematic outline – antithetical roles. It was established earlier that Ruff's *Häuser* series has been rather perceived as documentary because of its inscription in an alleged German photographic documentary paradigm. Its various digital manipulations have either been regarded as unimportant, considering Ruff's "rigorous" documentary approach,[111] or they are simply disregarded. While the reception of the *Häuser* series has fluctuated – the early reception in the late 1980s and early 1990s provides a more pronounced stance toward the documentary than later positions – the role of the digital retouching has never been articulated as an asset of its ability to document.[112] Gursky's digital post-production, on the other hand, has not only been tagged documentary *despite* digital retouching, but his images have often been interpreted as documentary partly *because* of it. "Gursky uses digital post-production in order to enhance such [documentary] statements, and not to resolve formal or aesthetics problems,"[113] Marie Luise Syring exemplarily argues in the important Schirmer/Mosel catalogue of the Düsseldorfer Kunstshalle exhibition (1998). A substantial part of Gursky's historiography, as established earlier, commonly relates his oeuvre to a documentary discourse of the globalized world in which digital retouching increases referentiality or allows for the circumvention of technical issues prohibiting the capture of

111 Julian Heynen, "Thomas Ruff," in *Bilder. Elke Denda. Michael von Ofen. Thomas Ruff*, exhibition catalogue (Museum Haus Esters, Krefeld, 1988), Krefelder Kunstmuseen, 1988.

112 While digital retouching has never improved the "documentary" reading of Ruff, more recent examples of his use of digital technologies, such as his appropriative processes (e.g., the *jpeg* series), have reconciled his imagery with the objects of his documentation. op. cit. (2004), showing the 9/11 attacks, exemplary illustrates a new documentary approach less concerned by indexicality than with image consumption and circulation.

113 While the word "documentary" doesn't appear in that quote, Syring mentions his "social and political involvement [...], which transcends his documentary capture of places and scenes" in a preceding paragraph. Marie Luise Syring, "Wo liegt 'ohne Titel?': Von Orten und Nicht-Orten in Gursky-Fotografie," op. cit., p. 5 – 6.

certain images. Thomas Weski, in the exhibition catalogue of Gursky's major retrospective in the Haus der Kunst in Munich ten years later (2007), interestingly connects his formal preoccupations, defined by a "pure desire of seeing,"[114] with the ability of his work to document. Weski interrogates the "authenticity of digitally built photographs," whose genuineness cannot be "unequivocally read"[115] [abgelesen] in the image. Analogue photography would on the other hand possess that function. He thus suggests a credibility of the image, hence a documentary factor, based on its verisimilitude: "the new definition of the documentary concept in the field of digital compositions could be correlated with its plausibleness."[116] What Weski suggests is the transgression of a commonly shared *doxa* defining photography through its relationship to the real, which clearly is of relative importance for historians, but has played an important role in the structuralist theorization of the photographic image, and in the related post-photographic theorization of digital photography.

In the important 2008 monograph *Andreas Gursky: Works 80 – 08*,[117] Martin Henschel corroborates this stance, legitimating the necessity of construction in order to improve representation. That particular aspect is discussed in theory, relying on references to Barthes, Brecht and Benjamin, and in practice, commenting on the resulting image, which surpasses a conventional image. Mentioning a quote by Bertholt Brecht found in Walter Benjamin's "A Short History of Photography," Henschel legitimates the idea of construction as an admissible intervention, which in photo-theoretical discourses is rather suspicious. He admits that he gives a new inflexion to Brecht's words, though: "The situation becomes more complicated because the simple *reproduction of reality* now says less than ever about reality [...]. So we have to *construct something*, something artificial, and 'set up.'"[118] In a further step, he argues that in that particular case manipulation is a necessity, declaring that an image such as *Paris, Montparnasse* (1993) could not have been made traditionally, as "it would have been impossible to produce an absolutely flat-orthogonal façade from one single angle."[119] The convergence of such positions and Gursky's constructions indicates a new relationship to the documentary, defined less by the *desire*, stringently pursued, to try to document objectively (as in the Bechers' case) than by the *need* to produce a documentation only possible through new approaches and new technologies. Such improved or enhanced documentary forms seem to be a necessity to cope with an era in which images have become omnipresent and are

114 Thomas Weski, "Der privilegierte Blick," in Thomas Weski (ed.), *Andreas Gursky*, exhibition catalogue (Haus der Kunst, Munich, 2007), Cologne, Snoeck, 2007, p. 19.

115 Thomas Weski, "Der privilegierte Blick," op. cit., p. 19

116 Ibid.

117 Martin Henschel (ed.), *Andreas Gursky, Works 80 – 08*, exhibition catalogue (Kunstmuseen Krefeld, Moderna Museet Stockholm, Vancouver Art Gallery, 2008 – 2009), Ostfildern, Hatje Cantz, 2009.

118 Walter Benjamin, "A Short History of Photography" (1931), in *One Way Street and Other Writings*, trans. Edmund Jephcott and Kingsley Shorter, London, 1985 (italics original, translation modified by Henschel), quoted in Martin Henschel (ed.), *Andreas Gursky, Works 80 – 08*, op. cit., p. 28.

119 Ibid.

produced at an exponential rate. Technically, the construction of *Paris, Montparnasse* hinges indeed on a particularity that has only few precedents in the history of photography in general, and even more so in the history of "artistic" photography: the double viewpoint. The three and a half meter wide photograph results from the juxtaposition of two images of a H.L.M.[120] building shot separately, horizontally sewn together, producing a particularly wide form factor, as mentioned earlier. The frontally constructed image, 70 percent filled by the grid structure of the architecture, possesses several formal, technical and conceptual particularities. A central single image-shot of such a wide structure, even at a distance with a zoom objective and the compulsory perspective correction, would imply a different result. The apartments at the borders, for instance, would be increasingly shown diagonally, rather than frontally, hiding their interior and undermining Gursky's all-seeing eye. Henschel's comment on that particular feature of the image reveals a position on its aptitude to document that differs considerably from more conventional views in which indexicality is central. He claims that not only "does [the montage] not "falsify" anything,"[121] but it allows the image to be enhanced, as "the view into the individual flats would have been steadily diminished toward the outer sides."[122] That part of the article is illustrated by a detail view of one of the apartments of *Paris, Montparnasse*, which is a very common editorial presentation.

Enlarged selections of the building have repeatedly been used as hermeneutical tools in various publications, aiming at a visual transcription of the idea of an enlarged document. In this case, the illustration somehow paradoxically shows a detail that, if considering the text, seems to suggest that this is one of these peripheral apartments and that we are granted visual access thanks to the digital montage. It is in fact in the middle of the image and would consequently be visible in a single-shot photograph. Numerous catalogues have printed various cropped sections of this particular image, zooming in or out of the photograph. Sometimes organized in sequence, they suggest various levels of reading, as if the print in a book was not sufficient to render the large-format photograph, or as if multiple information levels were contained in it and had to be pedagogically brought forth. The Haus der Kunst catalogue[123] for example shows various clippings from the apartment level to the whole image on five following pages, enacting the dialectical relationship between the particular and the general that Gursky's work is often interpreted through. But while the printing of an enlarged part of an image for pedagogical objectives is not uncommon in photography books, the sequential repetition of image parts appears much less frequently and is, for instance, rather

120 "Habitation à loyer modéré": French social housing. The "Mouchotte" building (1966) in Montparnasse was designed by architect Jean Dubuisson (1914 – 2011) and is the first project in Paris of such amplitude (752 apartments). Its grid design echoes Gursky's own interest for such patterns, which emerges at that time.

121 Martin Henschel (ed.), *Andreas Gursky, Works 80 – 08*, op. cit., p. 28.

122 Ibid.

123 Thomas Weski (ed.), *Andreas Gursky*, op. cit.

uncommon in Gursky's overall historiography. *Paris, Montparnasse* appears to be perceived as a particularly relevant image to illustrate Gursky's alleged ability to surpass the documentary aptitudes of a single image.

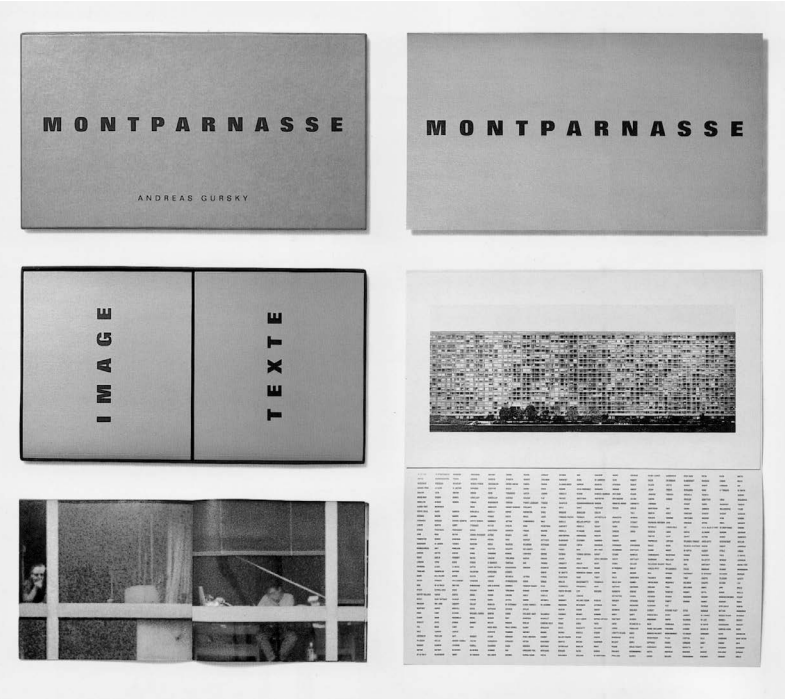

Fig. 76: *Paris, Montparnasse*, Portikus, 1995 (source: Martin Parr & Gerry Badger, *The History of Photobooks*, Vol. 2, 2006)

An alternative example of this approach can be found in a special edition book focusing on *Paris, Montparnasse*, edited for the Portikus Frankfurt exhibition in 1995,[124] in collaboration with the photographer (Fig. 76). Besides extreme enlargements allowing viewers to discern the facial expressions of individuals in the building,[125] the publication adds textual information to the project. The book contains, for instance, a list of the names of the roughly 750 families living in the building, extending the strictly visual information in its various formats and clippings to non-visual details, enhancing the general knowledge connected to the image. While the title of the photograph itself obviously enhances the connection between image and reference, the additional data provides the reader with an even more plausible reality he can relate to and as a collateral effect improves the inscription of the image in a documentary paradigm. Interestingly, twenty years later such

124 *Andreas Gursky. Montparnasse*, exhibition catalogue (Portikus, Frankfurt, 1995), Stuttgart, Oktagon Verlag, 1995.

125 The enlargements are for example reprinted in Martin Parr and Gerry Bager's *Le livre de photographies. Une histoire volume II*, Paris, Phaidon, 2007, p. 275.

metadata – non-visual information associated with an image – cannot be dissociated from the practice of photography altogether. Most digitally produced images in the 2010s harbor various values, such as geo-tags,[126] *within* a photograph, which thus contribute to its informational power. Despite the formal construction repeatedly connected to images with repetitive patterns such as Gerhard Richter's *1024 Colors* (1973), such a discursive pattern constructs *Paris, Montparnasse* as a documentary form, rather than as an image with a strictly formal value, and anticipates the economy of the forthcoming digital visual culture.

The analysis of *Paris, Montparnasse* and its reception shows the appearance of a new relationship to the real, expressed as much in the formal construction of the photograph, the double viewpoint, the large format, the panoramic form factor and the editorial handling of the project, as in its reception, which shows more than the eye could see and transcends "conventional" photographic representation. Every technical feature of this photograph enhances the supposed documentary abilities, which are commonly acknowledged by the critical discourse as being legitimate interventions, a position which paradoxically rejects a common photo-theoretical tradition in which strict indexicality prevails. Gursky's own position – "I compose freely, but I work with real and authentic material,"[127] he insists – shows to which extent the truth claim of photography and its concurrent discourse is stemmed by strict indexicality, a notion that seems, however, to be gradually replaced by verisimilitude, with the acceptation of digital tools. Clearly, some of the technical features deployed by Andreas Gursky are not new. Addressing the double viewpoint for instance necessarily leads to a comparison to stereo-photography, a feature that Thomas Ruff has explored with his various architectural stereoscopic views,[128] suggesting a confrontation during that period with improved photographic technologies. Obviously, stereo-photography differs from Gursky's case in that it produces two images, and only the brain reconstructs a discrete double viewpoint image. Every photomontage does, of course, combine several viewpoints. But the inscription of such technical features in the critical discourse suggests an evolving conception of the documentary in which digital tools are accepted at various levels, since both the *Häuser* and *Paris, Montparnasse* are somehow considered documentary. The concept of documentary that Gursky is associated with primarily derives from the model his work has been read into, through the re-actualization of its key proponents: the Neue Sachlichkeit. As the evaluation of the construction of the German documentary paradigm in the 1970s has shown, an alternative documentary model, in which the technology had precisely been erected as a tool able to improve human perception, is commonly discarded: Moholy-Nagy's *Neues Sehen*, its

126 GPS coordinates embedded into the digital code of a photograph.

127 Gursky here comments the creation of the picture *Hamm, Bergwerk, Ost* (2008). Andreas Gursky, in Jan Schmid- Garre, *Andreas Gursky. Long Shot Close Up*, documentary film, 60 min., Pars media, 2009.

128 The "*Stereofotos*" (from 1994) and the stereoscopic views of the "*I.m.v.d.r.*" series (2000 – 2001).

ascription to a mechanized vision and its emphasis on perception,[129] collides with the ideal of transparency that the documentary style has embodied, and which was re-instated as a *doxa* in the 1960s and 1970s. As the explicit dismissal by Klaus Honnef of the experimental forms of the new vision shows, the resilience of the documentary style in the discourse on documentary forms has persistently dissociated Düsseldorf photography from any experimental position as source – this was the case as much for Moholy-Nagy as for Gottfried Jäger's *Generative Fotografie* –, although their cross-reading might generate productive encounters.

3 FROM INDEXICALITY TO VERISIMILITUDE: THE SUPER-DOCUMENTARY

The shift in Gursky's image construction strategies of the early 1990s shows several important alignments addressing the documentary ability of photography. While indexicality, one of the most stable values of documentary photography in discourse and representation, is discarded by the shift from specific to generic pictures, the image is tweaked in order to ameliorate its documentary factor. Large formats and the convergence of reality and image through frontal constructions create an improved viewer experience, documenting recognizable type-images rather than actual places or buildings even if, through specific titles, the generic image is re-inscribed in a real context. Digital retouching tools play an important role in this process, as they allow the seamless construction of large-format photographs and concur with the deconstruction of photographs into two-dimensional images, a shift in which grid patterns play an important role. Gursky's imagery combines an image using indexical photographic fragments with a pre-existing mental image, addressing a common visual culture. As will be more thoroughly discussed subsequently, Gursky's visual world reflects familiar images, reminding viewers of their equivalents seen in the media or the web. The experience of Gursky's images is thus based on both immersive features (wide and large formats, etc.) and the construction of a documentary discourse emerging from the interaction of the knowledge of the viewer and the generic images he digitally creates, resulting in an expanded documentary experience. Creating visually seductive images stripped off from contextualizing markers, which he brings into resonance with contemporary visual culture and the relationship we commonly project onto indexical images, Gursky creates verisimilar images serving as projective surfaces. The reception of his early work, while acknowledging both photographic and pictorial elements, further stems that strategy by strengthening the documentary factor associated with his work. In that context, digital retouching tools are almost systematically considered legitimate as

129 See especially Olivier Lugon, *Le style documentaire: D'August Sander à Walker Evans*, 1920 – 1945, op. cit., p. 36 – 42.

they produce an improved viewer experience and are not perceived as manipulative. In *Paris, Montparnasse* they are logically read as necessary tools to create such an image, as they only circumvent the limitation of the photographic apparatus. The documentary factor thus also relies on these technologies, in diametrical opposition to digital tools as they were perceived by the post-photographic discourse.

The work of Andreas Gursky of the 1990s thus articulates a singular relationship between image and depiction, as the use of protocols to formalize objectification (e.g., the Bechers) has been reinterpreted. Clearly, Gursky has adopted numerous mechanisms established or developed between the 1950s and the 1970s (frontality, grid patterns, etc.), but he has adapted them in their relationship to the subject and in their relationship to the observer. While the subordination of the represented objects to the formal representation clearly exists in the Becher case already, there nevertheless remains a strong discursive element on documentation. In Gursky's case, the relationship to the depicted world is still crucial, as shown by his own or the critical positions. It is not so much based on indexicality but is constructed upon verisimilitude and a collective visual memory. Digital tools are thus not only in accordance with a strategy where strict indexicality and dogmatic positions are rejected, but they also embody an essential mechanism in the constitution of an expanded form of documentary. Combined with the discursive schemata of his reception, almost systematically addressing the increased documentary value of his work, despite its inscription in painterly processes, the work of Andreas Gursky, as a discursive entity, ought thus to be qualified accordingly, considering its superlative characteristics: we might call this new upgraded form "super-documentary." In this context, the use of digital tools in order to produce frontal wide format photographs, either by knitting multiple images together (e.g., *Paris, Montparnasse*) or by extruding an image (e.g., *Rhein II*, extruded from *Rhein I*), corresponds in terms of artistic endeavor to his use of subtractive retouching tools, erasing disturbing picture elements. Both technical manipulations serve the construction of a two-dimensional space, which acts as an interface between a clearly arranged reality and a beholder whose knowledge and visual culture is considered a constitutive parameter. The key formal and conceptual choices, which increasingly determine Gursky's image-making process – frontal constructions, grid patterns, horizontal stripe patterns and abstraction – serve his deconstructive approach to photography as a "window on the world," through a new codification of the medium in which strict indexicality is replaced by an expanded form of documentary. The first step in this process is analytical, as these four formal features further develop the typological intent that emerged with photo-conceptual practices, transferring the taxonomical protocol developed to represent reality into the image: rather than documenting the (specific) contemporary world, Gursky documents the (generic) representation of the contemporary world, systematizing its visual culture. The second step is thus generative. Gursky confronts the deconstructive pattern his photographs are structured by – in their relationship to the

fragments of reality they are built upon – with a generative outlook, addressing image production strategies. Gursky documents the world in that he produces images that represent the world, in a tautological movement that challenges the relationship of reality and depiction, and thus radically alters the status of the photographic.

C
EARLY DIGITAL COMPOSITIONS

1 JÖRG SASSE'S EARLY "TABLEAUS"

Amateur imagery and photographic codification

Jörg Sasse started to experiment with digital retouching tools at approximately the same time as Andreas Gursky, in the early 1990s. At that time, Gursky predominantly knitted images together, creating large-scale montages with rather unsophisticated post-productive interventions, assembling photographic material without retouching it. Jörg Sasse, on the other hand, had constructed complex digital composites from the very beginning of his use of these tools, unconcerned by the obviously digital appearance of his work. This constitutes an important difference in their approach, one that will also be reflected in their reception. Sasse, who had been familiar with various computer programming languages since the 1970s,[130] started a vast series entitled *Tableaus* in 1993, which includes 168 images as of today[131] and which constitutes his main body of work from the 1990s. Initially exhibited in the Städtische Galerie in Wolfsburg (1996) and the Oldenburger Kunstverein (1995), with some interiors from the early 1990s (which are not digital composites), the *Tableaus* increasingly became his most well-known series. In an exhibition in the Galerie Wilma Tolksdorf in Hamburg (1995) and in most subsequent

130 Biography of Jörg Sasse, in Andreas Keul (ed.), *Jörg Sasse. Arbeiten am Bild*, Munich, Schirmer/Mosel, 2001, p. 137.

131 See category "*Tableaus*" on www.c42.de. Accessed on June 1, 2012.

exhibitions of importance in the 1990s, such as at the Kölnischer Kunstverein (1996), the Kunsthalle Zurich (1997) and the Musée d'Art Moderne de la Ville de Paris (1997),[132] only the *Tableaux* were displayed, and curators overlooked the older images. Technically, the series combines two processes, creating not only an original formal approach in the Düsseldorf context but compounding two features that could easily be interpreted as undermining "photography" itself, if considering the commonly shared dogmas in photo-theoretical thought: the construction of digital composites and the use of recycled imagery. Most images from the series are based on found images, with Sasse only using his own camera scarcely.[133] The recycled photographic material used ranges from found family albums or professional slides found in the trash and bought at flea markets to "commissioned" images – he has, for example, asked the employees of a German bank to give him private images for a project[134] – intended to serve as evidence for vernacular visual cultures and their history. Sasse scans the found material in order to compose images on the computer, often using only fragments of the source material. The images are then "generated" on the screen, and the final result is printed on film negatives in order to obtain the final photographic print.[135]

In terms of artistic strategy, the complex composites can be understood through two concurring mechanisms: the use of amateur images in an inquisitive approach to the photographic apparatus and vernacular visual culture[136] and their recombination through digital processes. The first step, similar to Hans-Peter Feldmann's "typological" projects or Thomas Ruff *Zeitungsfotos*, strips down found images from legend and context in order to understand their autonomous "signification." In a second step, which we will address in detail in the next chapter, Sasse digitally reconstructs new images using the thousands of photographs he has browsed, 10 to 15 percent of which he digitalizes to constitute a database for his personal work.[137] The selecting process of these images reflects a core issue of Sasse's positions on the use of photography as an artistic medium. "What we see in a photograph can only be a synchronization [Angleichung] between an autonomous image which documents only itself,

132 These three monographic exhibitions have been co-organized by the participating institutions, but the selection of the exhibited *Tableaux* slightly differs.

133 See for example Bernhard Bürgi, "Curtains," in *Jörg Sasse*, exhibition catalogue (Musée d'Art Moderne de la Ville de Paris, 1997), Paris, Paris-Musées/Les Musées de la Ville de Paris, 1997, p. 34.

134 "Jörg Sasse im Gespräch mit Andreas Schalhorn" (Museum für Neue Kunst – ZKM Karlsruhe), op. cit., p. 57 – 58.

135 Annette Hürlimann, "In Suspense," in Jörg Sasse, exhibition catalogue (Musée d'Art Moderne de la Ville de Paris, 1997), Paris, Paris-Musées/Les Musées de la Ville de Paris, 1997, p. 6.

136 Sasse is, for example, interested in the specific formal qualities of images of a specific timeframe [Zeitschicht] or cultural area [Kulturkreis]. See "Bilder-(neu)-Ordnungen. Podiumsgespräch mit Jörg Sasse, Dieter Daniels und Susanne Holschbach" (transcript), at medienkunstnetz.de. Available at http://www.medienkunstnetz.de/themen/foto_byte/sasse, accessed on November 14, 2012.

137 "Jörg Sasse im Gespräch mit Andreas Schalhorn" (Museum für Neue Kunst – ZKM Karlsruhe), in *Perspektive Dokumentarfotografie. Dokumentation des Symposiums am 28. And 29. September 2002* (Museum für Angewandte Kunst, Cologne), Steffisburg, Wüstenrot Stiftung, 2003, p. 58.

and things we know or things we have seen before,"[138] Sasse argues. His approach thus focuses on the visual characteristics of these autonomous images, which he tries to expunge from all textual "confirmation," as their sense or meaning is commonly derived from the relationship of visual elements and textually expressed knowledge.[139] Sasse not only means to interrogate the meaning of a photograph; he also argues that the context for which an image has been produced – in the case of documentary photography this is often a "third instance" besides the image and the reality, for example a client, a newspaper, etc. – is a parameter that is often disregarded to understand an image, despite the impact it might have on the image's signification.[140] But although interested in the various parameters responsible for the construction of meaning, he primarily focuses on the visual evidence of the photographs themselves. Sasse decontextualizes the image in order to carve out its specific visual characteristics. One of the poles of interest of his inquisitive approach is amateur photography, as its formal codification is based on rules the photographer is unaware of but nevertheless submitted to, which guarantees (to a certain extent) a common visual language. Amateur photography as a witness of a specific codification, culturally conditioned, serves his interest in themes such as the contemporary or everyday life, expressed through particular, time-based trends, such as the musty character of these photographs, a feature he is particularly interested in.[141]

> *It is surprising how the conception of an image has changed throughout time. Every generation answers the question of how a good picture is made differently. This conception is shaped by media serving as vectors* [Transportmedien]*, magazines in the 1970s or television after that.*[142]

In order to apprehend these imageries, Sasse argues that he focuses on particular portions of an image, because he sees them as more representative of the visual culture of amateur photography. While the main subject of interest in vernacular photography is usually in the center of the image, the fringes are less subject to the compositional intentions of the photographer and thus reflect a particular, unintentional codification. Edges and backgrounds are consequently the prime material he uses for his composites. If Sasse's argumentation about addressing images outside of any context yet investigating the historicity of the formal style of vernacular photographs seems

138 Jörg Sasse im Gespräch mit Andreas Schalhorn" (Museum für Neue Kunst – ZKM Karlsruhe), op. cit., p. 55.

139 Categorization through tags will later reappear in the database works such as *Speicher* (2008). See *infra*.

140 Ibid., p. 56. A parallel could be drawn with the theorization of photography, in which images have often been analysed as autonomous objects, disregarding their social, institutional, discursive or technological inscription.

141 Sasse uses the term "Muffigkeit," ibid.

142 Ibid., p. 58. The idea of media-specific imageries, a central aspect of his work, will be developed subsequently.

somehow contradictory, it nevertheless provides interesting analytical criteria for understanding his digital compositional strategies, especially in order to grasp the subjects of his *Tableaus*, which are otherwise difficult to define. The idea of a random cropped section of an unimportant part of a vernacular photograph provides a good description of what Sasse's *Tableaus* show. As in Ruff's strategy, the image itself – not the motive – is the central subject of his series. While these fragments theoretically represent a specific object at a specific moment in time, their decontextualization through cropping produces generic picture elements – a kid, a house or a boat –, achieving a similar shift to Andreas Gursky who systematically evades the specific, except for the titles he uses. In Sasse's case, titles generated without connection to the photograph (i.e., numbers) push the schism between referent and image even further.

Fig. 77: Jörg Sasse, *5170*, 1995, (52 × 129 cm), page 34 of the catalogue for the exhibition of the Muséée d'Art Moderne de la Ville de Paris catalogue (1997), designed by Sasse

An interesting example of his use of cropped image sections can be found in the catalogue for the exhibitions held at the Kölnischer Kunstverein (1996) and the Kunsthaus Zurich (1997).[143] Sasse himself designed the catalogue, applying his selective cropping technique to the editorial project. On some pages (Fig. 78, top), he combines thematically close works (in this case the beach) in order to re-inscribe them in a context and create semantic dialectical relationships, or he uses multiple fragments from the same picture (Fig. 78, bottom), suggesting the entire source photograph, emphasizing the specific "signification" of the cut-out parts in relationship to the entire image. The title of the catalogue, "Something you hardly ever see is a black and white depiction of a strawberry," further engages with the signification a codified representation induces. However, these four images are not part of the exhibition: they are not reproduced in the contact sheet at the end of the catalogue nor are they present in either of the three exhibitions[144] or in the Paris catalogue.[145] Their use suggests Sasse's

143 *Jörg Sasse. Was man übrigens selten sieht, sind Schwarzweissfotos von Erdbeeren*, exhibition catalogue (Kölnischer Kunstverein, 1996 and Kunsthalle Zurich, 1997), Ostfildern-Ruit, Cantz, 1996.

144 The list of all exhibited works in the Paris, Cologne and Zurich exhibitions can be generated at www.c42.de. Accessed on June 1, 2018.

145 *Jörg Sasse*, exhibition catalogue (Musée d'Art Moderne de la Ville de Paris, 1997), op. cit.

interest for the intermediary status between the finished artwork and the stock images, a concept which will be further developed in his work *Speicher* (2008), a physical database containing 512 retouched images that can be assembled using generative algorithms, studied in the third chapter of this research. Already in the *Tableaus*, Sasse primarily depicts images, a strategy also exemplified by numerous details, such as the use of drop shadows in the Paris catalogue (also designed by him),[146] which emphasize the image as an autonomous object, rather than the image as reproductive media.[147]

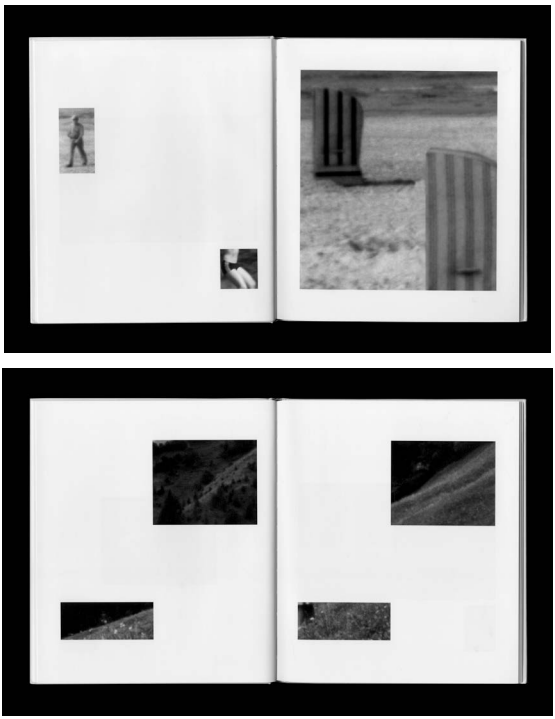

Fig. 78: Jörg Sasse, two double pages of the catalogue for the exhibition at the Kölnischer Kunstverein (1996) and the Kunsthaus Zurich (1997), designed by Sasse

Digits and digitalization: possibilities and contingencies

The second step in Sasse's work process is generative. Using the fragments from his database, he creates composites either simply using a cropped section of an image, or by totally reconstructing a credible picture from multiple fragments. One distinctive feature of these images, which we will principally evaluate here, derives from their particular aesthetics. Sasse's ostensible use of the digital picture elements, as in Thomas Ruff's *jpegs* several years later, reveals the origin of his images

146 Ibid.

147 Both the layouts of the Paris and the Zurich/Cologne catalogue contain design elements that emphasize the image selection processes: a drop shadow in the first and the use of small cropped images in the second.

and their manipulation, embodying a very different stance than Ruff or Gursky, whose photographs do not appear digital until the late 1990s. An important percentage of Sasse's series can unhesitatingly be identified as such, bearing unequivocal markers of digital post-production (e.g., pixilation, etc.). The series *looks* digital, embodying the belief that "a photograph can only document its own existence,"[148] an avowedly new stance in Düsseldorf, in a period when the digital was established as manipulative and unphotographic by numerous scholars, especially in the Anglo-Saxon context. While clearly there was a technical restraint at that time – computing power or capturing devices did not allow the production of high-resolution images –, Sasse both embraces the visual "contingencies" of these technologies and their possibilities in his image-making processes. But despite the fact that reception in the 1990s repeatedly stated that his images do not at first appear to be digital, the photographs give away their origin, at least for an observer used to these technologies today. We have to disagree with Andreas Keul, who emphasizes the importance of digital post-production for Sasse in the construction of his images but claims that it is hardly ever conspicuous.[149] We will address this historiographical particularity shortly. Visually, there are various types of digital markers that reveal these processes, ranging from constitutive manifestations of the used technology to painterly effects achieved through them. The most obvious of these processes is connected to technical contingencies and derives from the decomposition of the image into a pixel grid and the use of compression algorithms to decrease file sizes. The picture elements are thus either apparent in their most fundamental form as pixels or as geometrical shapes derived from compression algorithms. Compression is a typical process of the jpeg format, and its main visual outcome is to narrow down an image into a calculation, transforming continuous gradients into an additive pattern of plain colors, an effect particularly visible in some early composites, such as *1546*, created in 1993, especially if the large format – the photograph was printed at 137 by 200 centimeters – is considered. Pixilation and visible shapes or noise derived from compression reappear throughout the *Tableaus*, but the evaluation of the whole series shows that especially early images "suffer" from this characteristic, while later images have a much better resolution and sharpness. *9287* (2010), for example, provides a striking case of an incredibly sharp image, an effect that was costly and difficult to realize technically in the early 1990s.

148 Jörg Sasse, "Wo ist Trotzkij?," *Living – Das Kulturmagazin*, Braunschweig, No. 8/1, 1995, p. 20. The text is discussed for example by Herta Wolf, "Objekt objektiv. Zu den technologischen Implikationen von Fotografie," in Ute Eskildsen, et al., *Digitale Bildverarbeitung, eine Erweiterung oder radikale Veränderung der Fotografie? Dokumentation des Symposiums am 12./13. November 2004 in Museum Folkwang, Essen*, Ludwigsburg, Wüstenrot Stiftung, 2005, p. 20.

149 "Der digitale Eingriff ist für die ästhetische Wirklichkeit des authentischen Bildes nachgerade konstituierend, in Bezug auf bildnerische Erscheinung aber kaum je sichtbar, jeder technische Effekt in dieser Hinsicht bleibt bewusst aus." Andreas Keul, "Arbeiten am Bild," in Andreas Keul (ed.), *Jörg Sasse. Arbeiten am Bild*, op. cit., p. 15.

Fig. 79: Jörg Sasse, detail of *5303*, 1997 (105 × 150 cm)

Another explicitly digital function and key parameter defining the aesthetics of the series is the use of filtering effects applied to the whole image, achieving painterly-like effects, as in *5303* (Fig. 79). This distinctive formal characteristic, commonly used in computer graphics to blend together dissimilar picture elements (different light conditions, resolution, hue, saturation, etc.),[150] appears in numerous images throughout the series. It can thus be considered a constitutive trait of his imagery, as this particular kind of aesthetic is rather eschewed by photographers, simply because it *looks* digital. Besides being applied in order to minimize the visibility of pixels if needed, there are numerous concrete uses of those filters, most of which have been established by the reference editing software Adobe Photoshop. These tools range from artistic filters to corrective algorithms, trying – at least in the user interface – to differentiate a creative aspect from the editing. The artistic filters thus imitate drawing (e.g., "Charcoal" or "Comté crayon"), painting (e.g., "Paint Daubs" or "Palette knife") or tessellation and mosaic techniques (e.g., "Crystalize"). The corrective tools are rather used to correct or edit images, like those allowing users to remove dust or scratches on scanned photographs (e.g., "Dust and Scratches" or "Remove noise") or to decrease the specific crispness of digital photography (e.g., "Gaussian Blur"). The common viewer usually realizes these edited images are not strictly photographic and have been retouched. But the trained eye familiar with Photoshop even recognizes which filters have been applied. In *7515* (1995, Fig. 80), Sasse has applied a filtering method (such as the "paint daub" filter), which blurs the image, giving it painterly qualities. The light-reflecting attributes of vegetation are, for example, decreased; the image is matte. Remaining sharp lines (see Fig. 81) suggest the use of selection tools and thus the integration of heterogeneous image sources.

150 The process allows to hide differences in picture quality (e.g., resolution) by homogenizing the various image fragments.

Fig. 80: Jörg Sasse, *7515*, 1995 (44 × 57 cm)

Fig. 81: Jörg Sasse, detail of *7515*, 1995

In *5303* (Fig. 79), for example, the pointillist look, especially flagrant in the straight lines, clearly shows the use of such painting filters;[151] the decomposition into squares of *1546* (1995) suggests that such a paint filter has been applied to the already present pixilation effects. These irregular squares reflect the compression algorithm applied to the image. Clearly, one resulting effect of these interventions is to undermine the credibility of the image and to induce disbelief in the viewer's mind – an effect incompatible with Gursky's approach, for instance –, for he formally identifies the image as not strictly photographic. While the effect might have sometimes been carried out in order to correct coherence issues between image fragments of

151 It might also be reminiscent of grain effects on very light sensitive (high ISO) film for the untrained eye.

dissimilar origin, it creates a specific stylistic feature and tags the photograph as being digital. A third aspect, maybe less obvious at first sight, that reveals the digital nature of Sasse's images is the repetition or cloning of picture elements. His common strategy, which consists of stretching elements in order to seek for horizontal constructions, makes use of cloning tools to repeat, duplicate or multiply parts of an image. In *8246* (Fig. 82 and Fig. 83) for instance, parts of the building have been cloned in order to extend it across the image: the right part of the barn and the outer wall have been replicated almost *in extenso* on the left – the mound, the building structure or the number of bushes are identical –, only small details have been altered or erased in order to conceal the editing. The technique is certainly not as prevalent as the filter effects in the series, and there are few cases that are as exemplary as *8246*, but the result clearly reveals a specifically digital tool strategy, and it concomitantly embodies the fear of unlimited replicability or manipulability, which theorists including William J. Mitchell and Lev Manovich discussed in the early 1990s.

Fig. 82: Jörg Sasse, *8246*, 2000, 103 × 160 cm

A further distinguishing mark of the *Tableaus* resides in their systematic titles, based on four numbers, and only used in this particular series. The methodology implies a digital – to be understood as deriving from digits – categorization, which doesn't follow any logical sequencing, at least not one that could be easily readable. It also involves new production dates,[152] detaching the final image from its source material and its original time-tag. The classification establishes the images as digital, as Sasse's other series bear alternative title methodologies. Clearly, Sasse tags his constructed photographs and concurrently dissociates them from a visual referent, combining photographic and painterly features. He generates numbers, which do not seem to

152 Anette Hüsch, "Artistic Conceptions at the Crossing from Analog to Digital Photography," at *medienkunstnetz.de*. Available at http://www.medienkunstnetz.de/themes/photo_byte/artistic%20concept /scroll/, accessed on June 4, 2018.

reflect any order or sequence but rather to express an algorithmic labeling. These computational mechanisms could thus be traced back to the algorithms defining image formats and compression, or they could be correlated to the automated and systematized classification Sasse will develop subsequently through his website www.c42.de or the recent *Speicher* (2008), discussed in the third chapter of this research. These grouping or codification systems, while being per se analogue, prefigure or emulate the computing abilities of computers, showing a shift of the emphasis of digital technologies from sheer retouching tools to more complex digital characteristics and mechanisms.

Fig. 83: Source image for *8246*, published in Andreas Keul, *Jörg Sasse. Arbeiten am Bild*, 2001

Between photography and painting:
Sasse, critical reception and art historical discourse

Digital technologies do not play a central role in Jörg Sasse's discourse about his oeuvre, as he considers that retouching is merely a tool among other ways of producing a discourse with photography. He nevertheless explicitly addresses the concept of retouching repeatedly, in what seems to be an attempt to legitimate his position, even though, as will be argued subsequently, the reception of his work has never suffered from the fact that it used digital retouching tools. In "Wo ist Trotzkij?," a short text written in 1995 and published in *Living – Das Kulturmagazin* in 1996,[153] Sasse suggests anecdotic relationships between depictured object and image in order to exemplify the inherent weaknesses of photographic representation. For instance, he mentions the deception the photograph of a beer might enact because of its propensity to induce thirst. His text sounds like a manifesto or justification for his position and suggests his awareness of the dogmatic discourse surrounding image manipulation. The main argument Sasse invokes to address the relationship between meaning and photograph is to state that meaning is always derived from the

153 Jörg Sasse, "Wo ist Trotzkij?," *Living – Das Kulturmagazin*, Braunschweig, No. 8/1, p. 30.

interaction of the image and something outside the image[154] – such as a tag or legend (e.g., photo-reportage) or the knowledge associated with a particular kind of imagery (e.g., the relationship with an ID image of ourselves, which we apprehend through our knowledge of our mirror reflection) –, that "the technology used to make an image hardly ever matters" and that the manipulation of photographs has always existed.[155] As evidence he enunciates the various ways a photograph can be manipulated, juxtaposing frame, light, retouching, the singling out of elements ("freistellen") or the montage, all processes that have always existed. In his opinion, computer postproduction merely offers a refinement of such techniques. The title of the text – "Wo ist Trotzkij?" – obviously refers to the famous example of a photograph taken by I. P. Goldstein in which Trotsky has been edited out – also addressed by Thomas Ruff in his *Zeitungsfotos* series – to point toward famous historical examples of photographic retouching or manipulation. In "(Un) sichtbar," a short text published in a more academic publication on architecture photography edited by Gerda Breuer,[156] Sasse emphasizes another shortage of the photographic image. He argues that a photograph is only a two-dimensional "projection surface," which is completed by a mental image, by knowledge or experience, thus showing his interest for the mechanisms creating meaning.

Sasse's position, which seems to seek legitimation through the interrogation of photographic representation, somehow contrasts with his reception by critics. While his discourse is marked by a critical reading of the role of retouching and technology, interrogating the photographic apparatus, critics rather subordinate the digital retouching and his overall project to painterly processes.[157] An interesting critical position addressing the relationship of photography and retouching, and more generally the ability of the photographic to depicture reality, can be found in a 1996 article written on the occasion of Sasse's exhibition at the Kunsthalle Zurich by critic Christoph Blase.[158] It reveals an uncommon interpretation of retouching, especially surprising if compared to the dogmatic positions of the post-photographic discourse (which has of course to be considered in the context of an exhibition it was written for):

> *It is not the artist working with the computer who is dominated by the machine. Rather, it is the photographer who is leashed by the modest potential of the camera and the darkroom. Jörg Sasse is one of the first photographers who has been able to break loose from such contingencies. He did not manipulate*

154 He later theorizes that notion as "subtext." See for example "Vom denkenden Sehen lösen. Ein Interview von Jörg Gruneberg mit Jörg Sasse zum Dokument-Charakter der Fotografie," *Scheinschlag*, No. 1, 2006. Available at www.c42.de, accessed on April 1, 2018.

155 Jörg Sasse, "Wo ist Trotzkij?," op. cit., p. 30.

156 Jörg Sasse, "(Un)-sichtbar," in Gerda Breuer (ed.), *Aussenhaut und Innenraum. Mutmassungen zu einem gestörten Verhältnis zwischen Photographie und Architektur*, Frankfurt am Main, Anabas, 1997.

157 This chapter predominantly focuses on the evaluation of the critical discourse from 1990 to 2000.

158 Christoph Blase, "Die Gesamtretusche," *Kunst-Bulletin*, September 1996.

> *fragments or details of his photographs but has adopted retouching technologies as an autonomous image-making process. His images do not look like photographed motives or their surrealist extensions – nothing in them is counterfeit – but everything is made with mouse and keyboard, with honesty.*[159]

The use of retouching is interpreted here as a way of escaping the limitations of the photographic medium, constructing images instead of recording them. While discarding the retouching or the importance of technology, Sasse allegedly addresses a higher artistic project, which is made with "honesty," despite the fact that everything is constructed. There is an aspiration to a somehow honest representation, but on the other hand a focus on the visual experiments, as if the painterly character needed to be legitimized in relation to the photographic. The fact that the digital is often overlooked or discarded, as established earlier, is yet another expression of a tendency to disregard not only the retouching but also the discourse about photography more generally. The fact that the images are not "manipulations" but are "honest" digital compositions reflects a tendency of critics and Sasse himself to legitimate the process, emphasizing the painterly character and the image surface rather than the strictly depictive character of the photograph. The common discourse thus creates the idea of construction, concomitantly stressing the interrogative strategy, reflected in his reception. His work is often interpreted as implicitly pedagogical, aiming at orienting the viewer's experience toward an interrogative position. The overt rejection of the image's transparency, while showing obviously photographic images, thus creates a resonance that points at the insubstantiality of the truth claim associated with the medium.

Such an example can be found in an exhibition catalogue on the relationship between photography and painting from 2000. Andreas Kreul[160] clarifies the dialectic arguing that in *8626* (1999, Fig. 84) the strong contrasts between the white and orange house and the green background lead the viewer to question the image, as it seems unreal or unsound. He attributes both painterly and photographic qualities to this new kind of imagery, for which "the present does not yet have a name." More generally, the reception of Sasse's work is articulated around the dialectic between photography and painting, ascribing specific abilities to either medium. Annemarie Hürlimann for instance argues that he "lets his pixel-language have a dialogue with painting and photography, e.g., with Claude Monnet and Walker Evans."[161] In this coupling, the digital plays an interestingly progressive role, as Hürlimann emphatically notes: "Sasse has banished the 'furor antitechnicus' from his work and demonstrates which artistic liberties can be generated by digital tools, how it makes blossom the potential

159 Ibid.

160 Andreas Kreul, "Allegorien des blinden Flecks," in Stephan Berg et al. (ed.), *Unschärferelation. Fotografie als Dimension der Malerei*, exhibition catalogue (Kunstverein Freiburg im Marienbad, Stadtgalerie Saarbrücken, Kunstmuseum Heidenheim, 1999), Ostfildern, Hatje Cantz, 2000, p. 15.

161 Annette Hürlimann, "In suspense," in *Jörg Sasse*, exhibition catalogue (Musée d'Art Moderne de la Ville de Paris, 1997), op. cit., p. 20.

of imagination [sic], imparting a new magic to the picture."[162] Technology, as obvious it might be in the *Tableaus* series, is thus often minimized, which contrasts with the common criticism toward retouching or new technologies. Even the role of the photographic is understated, as his visual experiments are deciphered rather as pictorialist experiments, detached from any connection to the represented reality: "Apparently realistic imagery is transformed into a thoroughly fictitious image field, similar to the realization of a painting that produces the illusion of figuration by the application of many strokes and dots."[163]

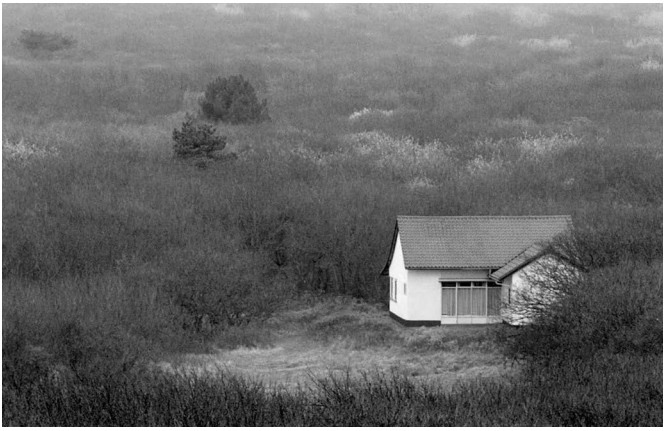

Fig. 84: Jörg Sasse, *8626*, 1999, (103 × 160 cm)

While some critics have mentioned the ambivalence between the photographic and the painterly and the fact that it might produce an interrogation of photographic representation, Sasse's work is much more commonly read as a formalist approach, in which photography doesn't play an important role as such. This position also directly influences critical opinion on the use of digital technologies, which are simply interpreted as painting tools and, as such, as unproblematic. The reception of the digital in Sasse's case interestingly differs from Ruff or Gursky, both of whom have been connected with the German documentary context. The fact that Sasse's images are rather acknowledged as pictorialist experiments has conditioned their legibility in that context; the digital is frequently considered irrelevant. His work is often discussed in aesthetic terms[164] ("gorgeous,"[165] "aesthetic shiver,"[166] "magic,"[167] etc.) and deprived of any documentary character. "This work of art is separated by a precipice from anything documentary,"

162 Ibid.
163 Bernhard Bürgi, "Curtains," in *Jörg Sasse*, exhibition catalogue (Musée d'Art Moderne de la Ville de Paris, 1997), op. cit., p. 34.
164 Connected with a predominantly critical historiography.
165 David Levi Strauss, "Jorg Sasse" [sic], *Artforum*, Vol. 38, No. 2, October 1999.
166 Ibid.
167 Annette Hürlimann, "In Suspense," in *Jörg Sasse*, exhibition catalogue (Musée d'Art Moderne de la Ville de Paris, 1997), op. cit., p. 20.

Hans-Joachim Lenger argues.[168] Clearly, the photographic is present in these texts, but its role or implication is downplayed through various interpretations. Lenger for instance argues that the photographic is "dissolved" into the painterly or "transgressed," and that its lost aura (Benjamin) is even "rebuilt" in these images.[169] If we consider the art historical sources, only Jacques-Henri Lartigue, Walker Evans or Jeff Wall sometimes attest the photographic origin of the images, while William Turner, Jean-François Millet, Jean-Baptiste Corot, Vincent Van Gogh, Claude Monet, Henri Matisse, Jasper Johns, Color Field Painting and Gerhard Richter repeatedly corroborate Sasse's supposed impressionistic and expressionistic descent.

The critical reception of Jörg Sasse's work highlights the fact that transparency remains a key notion in the interpretation of documentary photography. Thomas Ruff's *Häuser* and Andreas Gursky's early composites have primarily been interpreted as documentary forms, because of their verisimilar aspect and the specific formal qualities a document presupposes ("the documentary style"). Independent of Sasse's actual strategy, the overtness of his images *as* images inscribes his experiments into a necessarily formal-aesthetic discourse, as if his photographs had forfeited their documentary value through the loss of indexical connection. Clearly, the reading of photographs at the time is strongly interrelated with the discourse they are associated to: post-photographic images are necessarily retouched or manipulated because they seemingly reflect technological and morphological transformations. The cultural pregnancy and scopic regime of documentary forms defines the reading of any image that is recognizable as being documentary. Ruff's *Häuser* are formally quite similar to much older examples and can consequently be interpreted in that "tradition." Sasse's experimentations, on the other hand, whose principles lie in the cutting out of (digital) image fragments, do not have a decipherable cultural equivalent. This leads to their identification through a formal and aesthetic interpretation, and its association with painterly models, as they have no visual counterparts outside the fine art context. The early use of digital technologies by Jörg Sasse is consequently subjected to a double "misunderstanding": he does not fit the tradition he ought to be associated with (i.e., documentary), and his digital images are hardly connected with amateur images they are based upon.

2 DECONSTRUCTING PHOTOGRAPHIC REPRESENTATION

Until the late 1990s, Thomas Ruff made numerous series interrogating photographic representation, questioning its code, aesthetics and apparatus through stereoscopic views, composite and retouched portraits (see *infra*) and night views. However, until 1999 none of his photographs actually appear digital. On the other hand, throughout the

168 Hans-Joachim Lenger, "Introduction Speech of the Exhibition Jörg Sasse," Oldenburger Kunstverein, Oldenburg, 1995. Available on http://www.c42.de/hjlokv.html, accessed on June 1, 2018.

169 Ibid.

1990s Jörg Sasse produced digital images that bear obvious markers of their technical origin. Critical reception and Sasse himself have rather downplayed the role of the digital, however. Historiographically, there are several perspectives on his work that can be invoked to understand his relationship to the digital. Sasse has exhaustively written and talked about the relationship between digital retouching and the pretention of truthfulness of photography, but he claims that retouching does not play a paramount role in his work process – a claim that ought to be further evaluated. The reception of his work has engaged with its digital nature – the mention of the digital tools is almost systematic – but its implications have been downplayed and subordinated to the painterly process his work is commonly analyzed by. Paradoxically, curators and critics have increasingly narrowed Sasse's exhibited works down to his digital images, and every series he has made since the first *Tableaus* has been composed digitally. Although Sasse acknowledged in the mid-2000s that he is taking pictures again,[170] he considers it an "exercise" and it doesn't directly affect his work. At this stage of the emergence of digital tools in Düsseldorf, only Sasse produces overtly digital images, even if they are often not necessarily perceived as such, suggesting that critics have responded differently to images that were not obviously manipulated and those that were, emphasizing once again the fact that the perception of the digital rather relies on the aspect than the technical process it is based upon. While the digital in the reception of the *Tableaus* is interpreted as part of his painterly experiments, its photographic aspect is neglected, as only few critics have emphasized Sasse's interest for the modalities of photographic representation. In this case the overtness of the retouching, while deemphasized in the discourse, and the seemingly non-photographic visual output, resulted in a very different reception, as Sasse is hardly ever directly connected to a German documentary tradition. But despite these differences, Sasse's strategy shares several features with contemporary projects of Thomas Ruff and Andreas Gursky in his confrontation with photographic representation, which are consequently hardly ever reflected upon. The recourse to generic representational modalities clearly appears as a key feature in the work of these three Düsseldorf photographers – a tendency that can be traced back to the Bechers, but whose application takes on new forms in their students' work. The creation of the generic requires serial constructions in the Becherian typologies, while other mechanisms such as cropping, decontextualizing and the enlarging function are used in single images, often addressing the visual culture of the beholder. A further common modality the three artists share lies in the inquisitive approach to the medium of photography, whose apparatus is questioned through various interrogations and whose connection with documentary abilities is evaluated through various criteria, although indexicality, the chief vertical

170 "Streichhölzer, Sperrmüll und Van Gogh. Ein Gespräch zwischen Jörg Sasse und Jan Seewald in Düsseldorf," in *Imagination Becomes Reality, Part I. Expanded Paint Tools*, Munich, Sammlung Goetz, 2005. Available at www.c42.de/text.php?tid=5, accessed on April 11, 2018.

point of reference, is rejected. Sasse's renouncement of photographic capture might be interpreted as symptomatic of a shift from a subjective (or personal) analytical approach to photography in which he interrogates modes of depicting still lifes or interiors, to a more experimental method in which vernacular image-making processes and the historicity of such practices is questioned through the revelation of their formal and cultural mechanisms, a posture his work was only scarcely acknowledged for in the 1990s.

D
THOMAS RUFF'S ANALOGUE AND DIGITAL EXPERIMENTS WITH THE PORTRAIT

1 ALTERNATIVE REPRESENTATIONS OF THE FACE

"Objective" vs. manipulated portraits: Reception and strategies

Thomas Ruff's *Porträts* have unquestionably played a major role in the association of Düsseldorf photography with a "neutral," "cold," "factual" or "inexpressive" photographic depiction. More than any other early images of the pupils of the Bechers – primarily because of their notoriety and circulation – they have embodied the continuation of a specific German documentary tradition, recalling capturing protocols, serial imagery and typological approaches: "Sachaufnahmen von grösstmöglicher Objektivität" (factual recordings of the most possible objectivity), Julian Heynen exemplarily argues in an early catalogue (1988), drawing parallels between Ruff's "scientific-pragmatic documentary recordings" and identity photographs or typologies used in medicine and anthropology.[171] The examples of Ruff's association with documentation, documentary forms, the Bechers, scientific typologies or more generally a German tradition are countless and won't be systematically explored here, as the relationship of his imagery with his teachers has already been discussed. Rather, it is the ambivalence toward the *Porträts* series that will be highlighted. The regular *Porträts* and the three series of alternative portraits, the

171 Julian Heynen, "Thomas Ruff," in *Bilder. Elke Denda. Michael von Ofen. Thomas Ruff*, exhibition catalogue (Museum Haus Esters, Krefeld, 1988), Krefelder Kunstmuseen, 1988.

Retuschen, the *Blaue Augen* and the *Andere Porträts* series, interrogate through different strategies (protocoled depiction of the face, conventional retouching with paint, digital manipulations or image superimpositions) their status either as documents, or on the contrary as constructed images which reflect only their own two-dimensional reality. In this body of work, only the blue-eyed portraits have been digitally retouched, but, as all series engage with similar issues, they will be discussed as a group. Numerous scholars have approached this particular ambivalence, which is central to the understanding of Ruff's work. For instance, as early as 1991, Norman Bryson and Trevor Fairbrother explored his relationship to portraiture and the validity of the idea of a neutral depiction in an article in *Parkett*[172] opposing construction and documentation, surface and depth, a dialectical relationship Ruff's work has been repeatedly analyzed though.[173] The *Porträts* series has also been exhaustively studied in that respect in the doctoral dissertation of Patricia Drück, *Das Bild des Menschen in der Fotografie. Die Porträts von Thomas Ruff*[174] or, on a more conceptual level, by Martina Dobbe in her 1999 article "Bilderlose Bilder?"[175]

However important these positions, which cannot be easily summarized, indubitably are in the understanding of Ruff's work, it is not only the strictly scientific historiography of this concept that matters but also a more vague, critical or commonplace understanding of his work, which we would like to explore. In a similar manner as in the historiography of the concept of "Becher School" or "Düsseldorf School," the idea of German documentary forms is very resilient and is postulated without being actually established. Even more so, these interconnections between Ruff and the documentary are accepted even though a critical reading shows that they are often undermined by scientific and critical literature, as shown earlier. Our interest thus lies as much in the scientific reading as in a more indistinct, indeed methodologically insecure character, which postulates the dissociation from the referent but still sees his work as somehow documentary. Ultimately, it is only the combination of such a historiographical evaluation and the examination of Ruff's work processes that shall allow us to pinpoint the role of the various portrait projects in his work.

This unexamined association of Ruff with the documentary is a particularly paradoxical aspect of his early reception. Ruff's typologies are interpreted in the lineage of his predecessors, from Sander to the Bechers, without necessarily engaging with a critical analysis of such heritage. On one hand the portraits are considered documentary because they are reminiscent of Becherian protocols (frontality, uniform background, anti-theatricality, etc.), but there is a concomitant tendency to consider the portrayed individuals as generic, anonymous or de-humanized, as if the referent would disappear on the

172 Norman Bryson and Trevor Fairbrother, "Thomas Ruff. Spectacle and Surveillance," *Parkett*, No. 28, 1991.

173 See for example *Thomas Ruff. Oberflächen, Tiefen – Surfaces, Depths*, op. cit.

174 Patricia Drück, *Das Bild des Menschen in der Fotografie. Die Porträts von Thomas Ruff*, op. cit.

175 Martina Dobbe, "Bilderlose Bilder?," in Yvonne Spielmann and Gundolf Winter, *Bild, Medium, Kunst*, Munich, Fink, 1999.

surface of the image and in the multitude of the portraits. The process is similar to the common interpretation of the typologies of the Bechers, in which individual buildings disappear in a comparative mechanism and lose their discrete character. This paradox reveals the common equation of documentary rhetoric or style and the supposed absolute ability to document the depictured object, which Thomas Ruff has explicitly reflected upon. He created the *Andere Porträts* series as a "kind of reaction"[176] to the regular Porträt series, overtly arguing that the critics were simply "wrong" in disregarding the individuality of his models. Paradoxically, Ruff's series documents a generation of fellow artists and friends, while an example such as August Sander's *Antlitz der Zeit* (1929) establishes anonymous typologies of working categories:[177] but it is rather Ruff's representation, which is considered distant and detached from any existing referent, while Sander commonly embodies the documentary discourse.[178] As these *Porträts* have played a paramount role in the reception of Ruff's work, paradoxically conveying as much the idea of documentary photography, conceptual documentary forms dissociated from their referent or even strictly visual experiments, a comparison between them and their manipulated counterpart seems productive for understanding the re-evaluation of photographic representation and documentary forms by Düsseldorf photography, and for pinpointing the fluctuant historiographical specificities of their "mainstream" apprehension. Interestingly, this ambivalence emerges at various levels. Ruff himself states that his images are not documentary but that they still document, emphasizing that they are only images but that the portrayed individuals are discrete persons. Critics often highlight Ruff's documentary descent while pointing at conceptual dissociation from a referent, emphasis on formal constructions and, as stressed by Isabelle Graw, the importance of Ruff as an author: in this interesting historiographical example, the German critic – one of the first to use the terminology "Düsseldorf School" – reflects in 2009 on her interview with Thomas Ruff in 1989.[179] Looking back at the interview, she explicitly verbalizes her inability to resolve these oppositions and therefore fully grasp the complexity of Ruff's work; "often, the intentions and ideas ascribed to the artist by the critic have nothing to do with the artist's real motivations."[180]

176 Interview Thomas Ruff and Patricia Drück, in Patricia Drück, *Das Bild des Menschen in der Fotografie. Die Porträts von Thomas Ruff*, op. cit., p. 240.

177 See Martina Dobbe, "Bilderlose Bilder?," in Yvonne Spielmann and Gundolf Winter, *Bild, Medium, Kunst*, op. cit., p. 182.

178 An evolution in documentary forms which seems to have escaped Peter Galassi's attention, as mentioned in the commented index of Ruff's exhibitions in the Rivoli catalogue: the author (not explicitly identified) notices "the blatant misunderstanding with which a photography expert banalizes Ruff's approach" in his famous text "*Gursky's World*," in which he regrets that Ruff does not follow Sander's footpaths, as his "portraits have rightly become a touchstone of photography's capacity to evoke the unique person who resides in each human body." Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 241 and Peter Galassi, "Gursky's world," op. cit., p. 17.

179 Isabelle Graw, "Interview with Thomas Ruff. Shoot Management," in Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, exhibition catalogue (Castello di Rivoli Museo d'Arte Conteporanea, Rivoli-Turin, 2009), Milan, Skira, 2009, p. 57 – 59. Originally published in *Artis*, No. 41, Bern, October 1989.

180 Isabelle Graw, "Interview with Thomas Ruff. Shoot Management," in Carolyn Christov-Bakargiev (ed.), Thomas Ruff, op. cit., p. 57.

The inherent processes of the retouched portraits, in their opposition with the regular portraits, thus allow an understanding of this ambivalence, as the series embodies an at least seemingly antithetical position. Let's first, at this point, lay out the key features of the regular *Porträts*. They were realized in two main series. The first was predominantly printed in 18 by 24 centimeter format with various colored backgrounds between 1981 and 1985 and contains sixty photographs.[181] In the subsequent series spanning from 1986 to 1991 and resumed in 1998 until 2001, Ruff has systematically replaced the colored backgrounds with white backgrounds – better suited for large formats –, and the images have been printed in either 18 by 24 centimeters, or in bigger sizes, from 210 by 165 centimeters upwards.[182] According to Winzen's monograph there are 126 images in the second series, which makes a total of 186 non-retouched portraits. As mentioned earlier, they were executed according to a strict protocol, which seeks for a uniform, frontal and objectified representation of the subjects. Clearly, these photographs play a central role in the reception and perception of Thomas Ruff's work in the late 1980s and throughout the 1990s and can be considered one of the main vectors of Ruff's fame, chiefly through the decontextualizing effect achieved through the blowing-up of the images. The manipulated portraits, while they are coherent with his critical analysis and reconfiguration of photography as a system of representation, can be opposed to the regular *Porträts* in the relationship to the real that they supposedly represent but also in terms of reception, as the reception of their retouched counterparts – the *Blaue Augen* series (1991), the *Retuschen* (1995) and the *Andere Porträts* (1994 – 1995) – was somehow more discreet.[183] The three series, in their opposition to the traditional *Porträts* with their implied pretention or aspiration to objectivization commonly associated with photographic identification protocols, could be interpreted as an interrogation of portraiture photography and its "normative power"[184] and as a reaction to the reception of Ruff's regular *Porträts*. Every series takes up a specific process undermining the (alleged) stability of the frontal typologies. As mentioned earlier, one of the specificities of early digital retouching in Düsseldorf lies in its explicit connection with the history of such practices. Examples like the famous Lenin photograph in which Trotsky has been removed show a confrontation of Ruff and Sasse with the history of the retouching practices they apply in their imagery. The three retouched portraits series are in that sense exemplary, as two out of three rely on historical types of manipulations: while the *Blaue Augen* (1991) are digitally retouched, the *Retuschen* (1995) are retouched with paint and the *Andere Porträts* (1994 – 95) are image superimposition. All

181 Series A according to Winzen's classification. See Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 178.

182 Series B according to Winzen's classification. Ibid., p. 183.

183 Even if Ruff's *Andere Porträts* had been realized for the German pavilion of the 1995 Venice Biennial, one of the key international events of his early career (with his *documenta IX* participation in 1992).

184 Maximilian Geymüller, "Other Portraits," in *Thomas Ruff. Oberflächen, Tiefen – Surfaces, Depths*, op. cit., p. 102.

three series provide valuable insight into Ruff's approach to portrait photography and his questioning of representational modalities and their close relationship to the original series (the *Blaue Augen* and the *Andere Porträts* are variations or manipulations of the photographs used in the *Porträts*), and they each constitute valuable comparative examples to use in exploring Ruff's strategy. One of the main points appearing as central in these manipulated portraits lies in the formal and historical confrontation with retouching techniques, auto-reflexive image variations and more generally the relationship between image and identity. In Ruff's overall work of the 1990s, they clearly lean *against* the regular *Porträts* and their reception. The retouched portraits are not, however, a counter proposition as such to their counterparts, but rather a "response" to the discourse associated with them.

Between documentary and post-photography

If the *Blaue Augen* (1991) series is the earliest of the three, we shall at first discuss the *Retuschen* (1995), considering the historicity of the practice they address. The rather rarely explored *Retuschen*, a set of ten[185] color portraits[186] of sick individuals found in a medicine handbook and in which Ruff has hand-colorized cheeks, lips or eyelids with retouching color, reflect one of the oldest retouching techniques in photography (see Fig. 85)[187]. The series holds a particular status in Ruff's work, as it proves untypical in several respects. The prints are extremely small (14.7 × 10 cm), which is unique in the work of Ruff, who is primarily known for his large formats. If many series contain small and large prints of the same image, the smaller prints are still much bigger than the *Retuschen*. Only a few *Zeitungsfotos* and the stereoscopic views approach sizes under twenty centimeters. These retouched photographs are thus reminiscent of very common formats in vernacular photography, contrasting with the "looming" *Porträts*. This formal characteristic thus rather inscribes them in a non-artistic and non-contemporary context, as the format and motive call to mind historical black and white photographs that have been colorized (even though the source images Ruff uses are actually made in color). The commonly invoked source of these images is a retouched image of Sophia Loren that Ruff apparently saw in an exhibition in Venice in 1995, which doesn't give much clue as to how the images ought to be interpreted,[188] as the reference to manual coloring, commonly used in

185 While Winzen lists ten images in his monograph, the series is only credited with nine images in the Rivoli catalogue. Retusche 10 has apparently been removed from the series. See Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 234 and Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 118 – 121.

186 Thomas Ruff dates the original picture in 1993, even though they look considerably older. See Thomas Ruff, "*Retuschen* in Handarbeit," *Art. Das Kunstmagazin*, No. 4, April 1998, p. 6.

187 Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 234.

188 See for example Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 234. The anecdote is commonly taken up without mention of its origin (most probably an interview), such as in the Castello di Rivoli catalogue, Ruff's most up to date monographic publication. See Carolyn Christov-Bakargiev (ed.), Thomas Ruff, op. cit., p. 118.

photography[189] and in silent cinema[190] from the 1840s to the early twentieth century is obvious. A further discrete aspect of the *Retuschen*, besides the size, is the fact that these are the first found images Ruff retouches – the *Zeitungsfotos* had simply been decontextualized and printed at twice their original size – a process consolidated in the *nudes* and *jpegs* a few years later. While the images cannot be compared formally and allude to fundamentally different technologies and positions – a historical retouching procedure *versus* the confrontation with Internet imageries – they nevertheless share an appropriative approach, which emerged in the Düsseldorf context through the work of Hans-Peter Feldmann (in his numerous projects based on newspaper photographs) and Gerhard Richter's recycling of photographs (in his *Atlas* project) or photographic imagery (in his photo-realistic paintings), an aspect which will become increasingly central in the work of Düsseldorf photographers with the generalization of digital aesthetics in the 2000s.

Fig. 85: Thomas Ruff, *Retusche 04*, 1995

The final aspect that clearly sets the *Retuschen* apart is the fact that the set has only very rarely been exhibited. *Retusche 01* to *05* were shown at the Gallery Johnen and Schöttle in Cologne in 1995,[191] along with the *Andere Porträts*. But none of the series has been displayed in the 2001 retrospective curated by Matthias Winzen, *Thomas Ruff, Fotografien 1979–heute*, despite the fact that they are listed in the catalogue[192] and that the exhibition was shown in multiple locations

189 See article "Coloring (inpainting)," in Anne Cartier-Bresson (ed.), *Le vocabulaire technique de la photographie*, op. cit., p. 413.

190 See article "Coloriage," in André Roy, *Dictionnaire général du cinéma. Du cinématographe à Internet*, Montréal, Fides, 2007, p. 101.

191 According to the most complete and up to date exhibition list of Ruff's solo exhibitions and group shows of the Rivoli catalogue. See Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., 2009, p. 176 – 301.

192 Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 234.

showing different bodies of works.[193] When they were shown again in the Castello di Rivoli exhibition in 2009 in Milan, some critics consequently argued that they had never been exhibited.[194] And the fact that the installation shot of the *Retuschen* in the Rivoli catalogue was taken in Ruff's studio in Düsseldorf in 2009 – while most installation shots are obviously taken in museums and galleries – does indeed suggest that they hardly ever were.[195] Considering the particular (non-) circulation[196] of the photographs for fifteen years, it can be argued that they should rather be interpreted as a personal study or visual experiment reflecting Ruff's inquisitive approach to the medium, only sporadically acknowledged by critical and academic discourse. Undoubtedly, it is the curatorial stance of Carolyn Christov-Bakargiev, creating a "meta-retrospective" articulated around Ruff's position toward the medium of photography that brought the photographs to light, as they had curiously vanished after Winzen's monograph in 2001[197] and had hardly ever been exhibited. "The 1995 series, *Retuschen (Retouched)*, is the key to understanding Ruff's skepticism of photography – always and inevitably an artificial construction, more akin to painting than to any objective proof of existence,"[198] she argues. While we have to disagree with the finality of her conclusions – in her essay "Thomas Ruff at the End of the Photographic Dream"[199] she interprets Ruff's work as "denounc[ing] the failure of photography while reclaiming the aura of the unique artwork" –, she nevertheless points at the importance of the *Retuschen* in his interrogation of the medium and his interest for its history. This untypical set of photographs reflects Ruff's interest in the historicity of photographic representation, consistent with his oeuvre.[200] As shown through some *Zeitungsfotos*, Ruff explicitly questions photography as an indexical media through its history, producing photographs referring to its various retouching techniques, or more generally engaging with the semantic and visual potentialities of an image. Yet, the reception of these elements of his work shows that rather than using his confrontation with the history of retouching as an argument to understand his whole oeuvre, critics have either disregarded or paid too little attention to the discussion about these aspects. The approach toward the *Retuschen* is similar to the discourse on the retouching of the *Häuser*: considerations concerning retouching are either dropped or considered irrelevant.

193 After Baden-Baden, the show traveled to Oslo, Essen, Munich, Dublin, Vitorio-Gasteiz, Porto, Liverpool and Warsaw. For details of exhibited works see Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., 2009, p. 234 ff.

194 For example in a review by Augusto Pieroni, "Thomas Ruff," *Aperture*, No. 196, Fall 2009, p. 18.

195 Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 118.

196 Paradoxically, some *Retuschen* are shown in the *Contacts* documentary film series on photographers produced by Arte. Jean-Pierre Krief, *Contacts. Thomas Ruff*, film, 13 min., France, Arte, 1997.

197 Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit.

198 Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., 2009, p. 14.

199 Carolyn Christov-Bakargiev, "Thomas Ruff at the End of the Photographic Dream," in Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 14.

200 He explicitly acknowledges the history of photography as an important "subject" of his work. See the interview of Thomas Ruff by Gabriele Naia, "Thomas beyond the Surface," at www.italy.exhibart.com, published on December 6, 2010 on the occasion of his exhibition in Prato, Italy, (site now offline).

2 THE "ANDERE PORTRÄTS" AND "BLAUE AUGEN" SERIES

The *Andere Porträts* (1994 – 95), exhibited in the German Pavilion of the 1995 Venice Biennial (Fig. 86), embody yet another explorative visual experiment addressing historical precedents. Aiming to create multiple exposure images as a reaction to the reception of the regular *Porträts*[201] – Ruff argues that to define them through the adjectives "anonymous, objective and anti-individual" was plain "wrong"[202] –, the photographer came across a portrait generator used by the German police, the Minolta Montage Unit (Fig. 87), originally built to assist reconstructive surgery developed in the aftermath of Hiroshima and Nagasaki. The device was discovered by coincidence by a German police officer at the Photokina Köln in 1972,[203] where it was introduced and commonly used to provide police forces and press with identikit[204] pictures, especially of terrorists. Ruff's historiography almost systematically refers to the use of the unit by the German police and the fact that it was lent to him from the historical collection of the Landeskriminalamt [police department] Berlin, but the origin of the apparatus is hardly ever mentioned. Despite an obvious connection with RAF imagery present in the media at that time, the origin of the project is unclear and underexplored. Fellow German photographer Clemens Mitscher created his *Opfer* series with very similar portraits (Fig. 88), using the same Minolta montage unit from the *Landeskriminalamt* Düsseldorf in 1987, and he showed them in the Brotfabrik Berlin in 1994 in the exhibition *Staubsaugerbeutel und Phantombilder*.[205] The fact that they appeared on the cover of *Kritische Berichte, Zeitschrift für Kunst- und Kulturwissenschaften* that same year[206] and that Jean-Christophe Amman, curator of the German Pavilion of the 1995 Venice Biennale, knew Mitscher's project,[207] might suggest that Ruff saw Mitscher's work, an aspect of the series that Ruff's historiography hasn't reflected upon. The only occurrence in which the two projects have been connected can be found in a text by Theo O. Immisch in the catalogue of a "post-photographic" exhibition

201 Ruff says that he was pursuing the idea to create these kinds of portraits already in 1992. Jean-Pierre Krief, *Contacts. Thomas Ruff*, op. cit.

202 Interview Patricia Drück and Thomas Ruff (Düsseldorf, November 22, 1999), in Patricia Drück, *Das Bild des Menschen in der Fotografie. Die Porträts von Thomas Ruff*, op. cit., p. 240.

203 Information on the use of the device can be found in *Der Spiegel*, No. 30, 1978. Available on https://www.spiegel.de/spiegel/print/index-1978-30.html, accessed on June 29, 2018. Information on its technical features in J. A. Slater and T. F. Sullivan, "Minolta Synthetizer as used by the Rockland County (NY) BCI (Bureau of Crime Investigation)," *Fingerprint and Identification*, Vol. 56, Issue 10, April 1975.

204 While identikit is originally a specific technique for criminal identification purposes, it is commonly used generically to describe such composite portraits independently of the used technology (drawings, paper stripes, Minolta montage Unit, digital systems, etc.). See www.cia.gov.

205 Email exchange with Clemens Mitscher, June 29 and July 1, 2012.

206 *Kritische Berichte, Zeitschrift für Kunst- und Kulturwissenschaften*, No. 3, Marburg, Jonas Verlag, 1994.

207 Mitscher had invited Ammann for a lecture for an exhibition of his students at the Hochschule für Gestaltung Offenbach am Main. Email exchange with Clemens Mitscher, June 29, 2012.

project in which Mitscher's work was exhibited.[208] But more than the antecedence of the *Opfer* series, it is the permeability of Thomas Ruff's *Porträts* that ought to be underlined. Although formally very close to Nancy Burson's composites or Mitscher's work, Ruff will rather be inscribed in historical forms of a scientific discourse addressing body typologies (i.e., anthropometry)[209] or contemporary forensic science,[210] while the other two photographers will be associated with contemporary implications of morphological and technological change. The documentary tradition clearly orients the reading of his photographs.

Fig. 86: Exhibition view at German Pavilion, Venice Biennial 1995

For the creation of these other portraits, Ruff dismissed the use of digital technologies, as he sought for imperfect images in which the heterogeneity of visual sources was visible. At the time he showed skepticism toward computer technology, stating that every "idiot" was using it.[211] The Minolta apparatus allowed, through a mechanism based on mirrors, the production of a single shot image with two source photographs. Ruff used his own *Porträts* as he wasn't allowed to use archival material.[212]

208 Theo O. Immisch and John P. Jacob (ed.), *Chimaera. Aktuelle Kunst aus Mitteleuropa*, exhibition catalogue (Staatliche Galerie Moritzburg, Halle/Landeskunstmuseum Sachsen-Anhalt/Month of Photography, Bratislava, 1997), Leipzig, Connevitzer Verlag, 1997 and email exchange with Clemens Mitscher, June 29 and July 1, 2012.

209 See for example "Interview of Thomas Ruff by Stephan Dillemuth," in Thomas Ruff. *Andere Porträts + 3D*, exhibition catalogue (Venice Biennial, 1995), Ostfildern, Cantz, 1995.

210 See for example Matthias Winzen, "A Credible Invention of Reality," in *Thomas Ruff, Fotografien 1979–heute*, op. cit., 141–145.

211 The German original text is clearly more critical than the translated interview: "inzwischen arbeitet jeder Depp mit Computer" (every idiot now works with computers) became "everybody is fiddling around with computers these days." See interview Thomas Ruff and Stefan Dillemuth, in Thomas Ruff. *Andere Porträts + 3D*, exhibition catalogue (46 Venice Biennial, 1995), Ostfildern, Cantz, 1995, p. 13.

212 A difference from Clemens Mitscher's project *Opfer*, in which he was allowed to use archive material by the police, provided that he only used one constitutive element (e.g., nose, or eyes, or ears) from every criminal in the database. See Email exchange with Clemens Mitscher, June 29 and July 1, 2012.

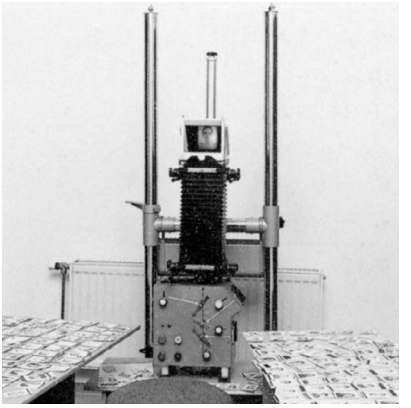

Fig. 87: Minolta Montage Unit

Anderes Porträt Nr. 109A/14, for example, merges *Porträt (A. Knobloch)*, 1990 (Fig. 90) and *Porträt (S. Weirauch)*, 1988 (Fig. 91).The technical specifications of the apparatus implied that "certain margins or structure" remained visible,[213] explicitly displaying the process. The silkscreen prints on paper – contrasting with the more "auratic" chromogenic print portraits – can thus be interpreted as materially reflecting the mechanical genesis of the images, and somehow a disconnection from the regular portraits. The *Andere Porträts* and their original counterparts are not dissimilar in their way of addressing identity through its protocoled representation though, and they engage similar interrogations. Yet, while both series echo historical precedents, the multiplicity of the *Andere Porträts* does so more explicitly. The regular portraits have been interpreted in the wake of the identification of the human being through its physiognomic traits, from Gaspard Lavater's physiognomy to Francis Galton's eugenics, Cesare Lombroso's phrenology and Alphonse Bertillon's anthropometry.

As Allan Sekula has exhaustively shown in "The Body and the Archive,"[214] these imageries, while they all derive from a scientific representation with a fixed protocol, engage differing visions and economies of power, oscillating from the analytical to the utilitarian, aiming either at understanding or on the other hand focusing on conditioning and improvement. While the *Porträts* reflect the identification photography protocols developed by Bertillon and used until recently, the *Andere Porträts* recall Francis Galton's superimpositions and concurrent eugenicist philosophy. In the context of this study, which aims to understand a reconfiguration of photographic representation and its relationship to documentary practices, we shall thus reflect on the mechanisms of superimposition that Galton's and Ruff's images enact rather than the economies of power these images engage with.

213 Interview Patricia Drück and Thomas Ruff (Düsseldorf, November 22, 1999), in Patricia Drück, *Das Bild des Menschen in der Fotografie. Die Porträts von Thomas Ruff*, op. cit., p. 240.

214 Allan Sekula, "The Body and the Archive," *October*, No. 39, Winter 1986.

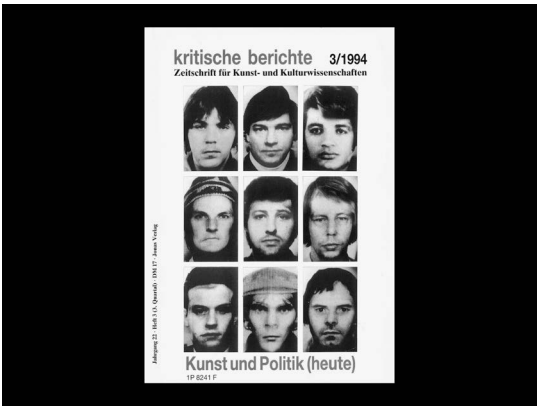

Fig. 88: *Kritische Berichte* with Clemens Mitscher series *Opfer*, cover, 1994

As mentioned earlier, the *Andere Porträts* have been conceived by Ruff as a reaction to the reception of the regular *Porträts*. He conceives of and describes them as being "autonomous" from a referent and as having their "own reality";[215] with these words, Ruff resorts to the very same vocabulary that critics have used to describe the regular portraits, considering their two-dimensionality and their dissociation from the depictured individuals, implicitly commenting on the reception of his work. Paradoxically, they have been interpreted at the same time as being part of the German documentary paradigm we established earlier, being both reduced to two-dimensional, autonomous images and documents. Physically constructing new images of non-existing individuals with the Minolta Unit, Ruff seems to draw attention to the fact that images have their own realities, that photography "is less to be seen as documentary or descriptive than as generating reality"[216] but that it obviously retains a certain relationship to the depictured *and* also produces its own reality. In that particular case, the phantom images produced with the Minolta Unit and used by the police have converged with discrete individuals, thus "catching up" with reality[217] or, as Paul Virilio would put it, preceding reality.[218] They enact the uncoupling from the referent, creating a virtual image. But paradoxically they also reflect a process used in a police work context with pictures of real individuals in order to find real suspects and are, as such, fundamentally connected to the "reality" they refer to.

215 Matthias Winzen, "A Credible Invention of Reality," in *Thomas Ruff, Fotografien 1979 – heute*, op. cit., p. 142.
216 Maximilian Geymüller, "Other Portraits," in *Thomas Ruff. Oberflächen, Tiefen – Surfaces, Depths*, op. cit., p. 102.
217 Ibid.
218 See for example Paul Virilio, *La machine de vision*, Paris, Galilée, 1988.



Fig. 89: Thomas Ruff, *Anderes Porträt Nr. 109A/14*, 1994/1995 (b/w)
Fig. 90: Thomas Ruff, *Porträt (A. Knobloch)*, 1990
Fig. 91: Thomas Ruff, *Porträt (S. Weirauch)*, 1988

One of the key processes explicated in the *Andere Porträts* – while remaining implicit in the regular *Porträts* – lies in the relationship between the individual and the plural image,[219] the mechanism that conditions the reading of a single photograph brought into resonance with other similar photographs. This relationship has, for instance, been explored by Martina Dobbe, who confronts Francis Galton's superimpositions and the Becher serial images using Wittgenstein's concept of *Familienähnlichkeiten*. Inscribing the couple's work in the context of the emergence of linguistic and semiological thought,[220] she shows how the single photographic image has been increasingly questioned in its relationship to or as a plural image. Multiplication, serialization and the resulting juxtaposed reading of images have been increasingly understood through dialectical relationships, a phenomenon that has affected artistic production and theory. This plural and comparative formulation,[221] the development of which can be traced back to the nineteenth century – as shown by the historians of science Lorraine Daston and Peter Galison in *Objectivity* (and subsumed by Dobbe) – articulates various "philosophical and notional concepts such as the 'characteristic,' the 'typical,' the 'ideal' or the 'representative-objective.'"[222] The comparative case study confronting Henry P. Bowditch's (a contemporary of Galton) *Composite Photography of Twelve Soldiers* (1894), twelve photographs of individuals and one composite photograph) and the juxtaposition of the Bechers' *Gasbehälter* (1966 – 1983) with Idris Khan's *Every ... Bernd and Hilla Becher Spherical Type Gasholder* (2004, nine photographs of discrete gasholders and one composite image) reveals the conceptual oscillation between individual and plural, as much in its theoretical or conceptual frameworks as in its formal articulations.

219 See David Ganz and Felix Thürlemann (ed.), *Das Bild im Plural*, Berlin, Reimer, 2010.
220 Martina Dobbe, "Fotografische Bildanordnungen," in David Ganz and Felix Thürlemann (ed.), *Das Bild im Plural*, Berlin, Reimer, 2010.
221 Ibid., p. 347.
222 Ibid., p. 343.

Fig. 92: Thomas Ruff, preparative sketch for *Andere Porträts* (screenshot from Jean-Pierre Krief, *Contacts. Thomas Ruff*, 1997)

The mentioned works exemplify the divergent interactions between images. The Bechers' typology confronts one image with a set of images – Dobbe calls it a tableau[223] –, which entails two opposed readings of the singular: while the differences between the buildings appear in every single photograph, a homogeneous type-image materializes when looking at the whole tableau. The first reading remains on a depictive level, focusing on the descriptive features of the photograph; it concentrates on the shown building. The second reading brings about a certain autonomization of the images from their depictive character; it stresses the image rather than the depiction, emphasizing the visual and formal characteristics of the photographs. In Galton's and Khan's composite projects, this second reading prevails, as all photographs are compressed into a single image, a multiple in which only a generic type emerges.[224] The first specific appraisal, focusing on an individual building, is here prohibited. A further feature defining the typology and the composite lies in the fact that they work autonomously, without resorting to external images. Adding a row of gasholders in a Becher typology or adding a gasholder in Khan's composite does not change the reading of the image. The fact that Ruff uses recognizable human faces in the *Andere Porträts* changes that autonomy, as the series relies on its comparison with pre-existing images and on a certain type of portraits, formally homogeneous, and with an easily recognizable cultural connotation. Ruff's portraits are associated with photographs used for identification, which are thereby more loaded than a picture of a building. In this case the articulation

223 See *supra*, p. 137–139.

224 Galton uses the term "generic" to describe these composite portraits as soon as 1879. See for example Francis Galton, *Inquires into Human Faculties and Its Development*, London, Macmillan, 1883. Electronic edition (2001) available at http://galton.org/books/human-faculty/text/human-faculty.pdf, accessed on August 19, 2014 and Francis Galton, "Generic Images. With Autotype Illustrations," *Proceedings of the Royal Institution*, London, 1879.

between individual and plural image works differently, as in Khan's and the Bechers' cases it operates *within* the work, while Ruff's also does *outside* itself. Interestingly, that autonomy is more defined by the use of faces than by the image construction. The regular *Porträts*, which are not conceived as a stable series (even though they might be displayed as such), also recall references outside the displayed images.

Alternative portraits and the body

As in Francis Galton's and Henry P. Bowditch's projects aiming to create a composite type-image, Ruff's *Andere Porträts* produce a type of portrait whose definition fluctuates between the individual and the general, the specific and the generic, blurring the "documentary" factor of the normal *Porträts*. Addressing such a famous example as Galton's superimpositions and reflecting on the understanding of his own body of work, Thomas Ruff combines his own compositional strategies with an inquisitive approach to the medium of photography, in this particular case much more explicitly than in other series. The surprisingly didactical enterprise carries on his interrogation of identity and representation. Interestingly, the reception of this alternative portrait series further echoes the dissociation between a "documentary" corpus and a "post-photographic" corpus. Ruff's various portraits are commonly read in the lineage of a German documentary tradition, while very similar works, such as Nancy Burson's composite portraits from the early 1980s based on similar image superimpositions,[225] are rather connected with post-human or digital imageries. Using combined video signals, Burson created work that is formally and conceptually similar to Ruff's superimpositions. Her *Beauty Composite* series for example, merges beauty ideals represented by figures like models or actors (Fig. 93) and the *Warfare* series, which compounds pictures of presidents. Some of Ruff's regular or retouched portraits have in fact been connected to post-photography. *Porträt (S. Weirauch)* and *Porträt (M. Vössing)*, both from 1988, were, for instance, displayed in the inaugural exhibition *Post-Human* of the FAE Musée d'Art Contemporain in Pully in 1992. The exhibition was one of the first to use the terminology "post-human" and remains as such one of the most commonly quoted examples in the historiography of post-photography. Generally, the other portrait series is rather read as a reflection on identity, on RAF imageries, as documentation necessarily read in relation to his "typologies" and the Düsseldorf context. Burson, on the other hand, is almost systematically connected to the post-human, despite an explicit interest in similar issues, and is reduced by her historiography to a formal confrontation with digital technologies and corporality in a context of gene manipulation and beauty ideals. She has exhibited in some of the paradigmatic exhibitions addressing such issues, such as *Fotografie nach der Fotografie*. Despite similar

225 See for example Vilém Flusser, "Nancy Burson. Chimaeras," in Hulbertus von Amelunxen, Stefan Iglhaut, Florian Rötzer, Alexis Kassel and Nikolaus G. Schneider (ed.), *Photography after Photography. Memory and Representation in the Digital Age*, op. cit. p. 150 – 155.

technical and formal construction and similar discourse, and despite the fact that both series are perceived as digital manipulation (which isn't technically true), Burson is labeled post-photographic and connected to the post-human, while Ruff is rather attached to the documentary context he emerges from, at least until a period of re-evaluation of digital images in the 2000s (see *infra*). The confrontation further crystallizes the schematic opposition of post-human or post-photographic imageries, which are rather Anglo-Saxon, and digitally retouched projects connected to the documentary discourse, which are rather German.

The *Blaue Augen* series (1991) is the earliest of Ruff's retouched portrait series. Considered individually, it could very well be seen as a post-photographic experiment addressing post-human bodies, despite the fact that the retouching is rather inconspicuous. In *Blaue Augen* (1991), Thomas Ruff retouched twelve of his portraits, digitally manipulating the eyes of six male and six female models in blue by using a cut-out iris from one of his photographs. The project is a response to *Galeries Magazine* critic Jean-François Chevrier and *Flash Art* critic Klaus Ottman, who in 1990 accused his *Porträts* of reflecting questionable conceptions of race. His images supposedly resemble social-realist or even national-socialist art, showing only blonde individuals with blue eyes.[226] Except for the retouching, Ruff has also changed the titles, using instead of the generic word Porträt with the name of the model, the words *Blaue Augen* with the initials of the model and the initials B.E. for every image, which stands for "blue eyes." *Porträt (R. Huber)* (1988) is for example switched to *Blaue Augen R.H./B.E.* (1991). The small size c-prints (29.5 × 39.5 cm) could very well be associated with the main concerns of the post-photographic debate – digital image retouching, photographic truth and post-human bodies – but as transformations of an existing series, they obviously have to be appraised as such. Rarely exhibited,[227] the series probably became known primarily through the response of art historian Jörg Johnen (a gallery owner representing Ruff) to the claims of eugenics in number 28 of the 1991 *Parkett*. And maybe on a more anecdotic level, through an edition in 1991 of a new blue-eyed portrait (the thirteenth), *Porträt Josef Strau*,[228] produced as an edition of one hundred prints by *Texte zur Kunst* in Cologne. Similar to the *Retuschen*, the project seems to have dodged curatorial and scientific interest. Ruff's images that use explicit digital retouching seem to be incompatible with the documentary paradigm and are consequently – this remains hypothetical at this point – unheeded. It ought to be clarified how the overtly digital jpegs became illustrious and omnipresent in Ruff studies, while every series of the 1990s in which the

226 In *Galeries Magazine*, No. 36, April/May 1990 and *Flash Art*, Vol. 23, No. 154, October 1990, respectively. See Jörg Johnen, "Street and Interior. On the Work of Thomas Ruff," *Parkett*, No. 28, 1991.

227 One of the few exhibitions took place at the Wilma Tolksdorf Gallery in Frankfurt in 1998, where eight prints were shown.

228 Winzen's monograph uses "Porträt Josef Strau" as title, the website of *Texte zur Kunst* uses "Porträt 1991." See www.textezurkunst.de/editionen/thomas-ruff1, accessed on July 6, 2018.

digital retouching is overt (the *Blaue Augen* and the *Plakate*), and those series explicitly addressing retouching such as the *Retuschen*, are only rarely exhibited and scarcely studied, which has even led Ruff to comment on mistakes written about these series. In 1998 for instance, he responded to an *Art: Das Kunstmagazin* article, which stated that his *Retuschen* had been digitally retouched. He wrote that he was "puzzled" by such a mistake[229] and sarcastically added that somebody from the editorial staff had probably mistaken them for large-format political posters. This anecdotic incident further shows to what extent the retouching in his work suffers from disfavor and lacks proper scientific evaluation.

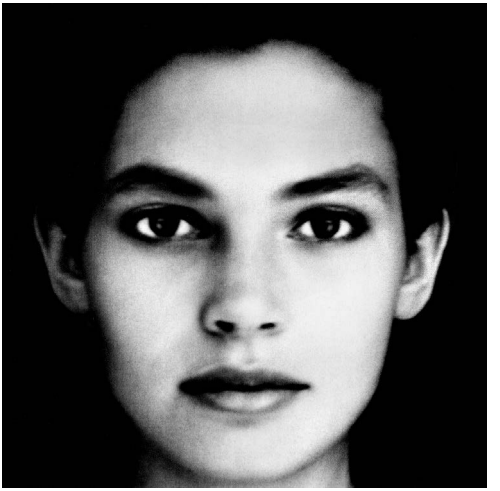

Fig. 93: Nancy Burson, *5 Vogue Models*, 1989 (b/w, silver gelatin print, 23.4 × 21.59 cm)

3 DIVERGING RECEPTION

The evaluation of Thomas Ruff's three alternative portrait series, two of which have hardly been studied or exhibited, the third playing an important role in the apprehension of his work, shows that while they comply with his inquisitive approach to photographic representation and with his confrontation with the history of photographic practices, their critical appraisal has differed considerably. The *Retuschen* and *Blaue Augen* hardly appear in exhibitions and in critical or scientific literature, which, for an artist who is chiefly renowned for his portraits, is rather surprising. The format has definitely played an important role in the reception of Ruff's work. The blown-up *Porträts* and *Andere Porträts* were acknowledged differently than the small-format *Retuschen* or the medium-format *Blaue Augen.* It is obviously difficult to explain why galleries, critics and institutions did not find in those two last

229 Thomas Ruff, "*Retuschen* in Handarbeit," *Art. Das Kunstmagazin*, No. 4, April 1998, p. 6.

series the interest they had found in the *Porträts*, the *Häuser* or the *Interieurs*. But stating the fact that these two series, in which retouching is both visible and a constitutive element of the artistic position, have been excluded from most monographic curatorial projects and have hardly been evaluated, exposes a resistance toward retouching in general, digital or manual, when overtly visible. The case of the *Andere Porträts*, which have often been interpreted in relationship to identification protocols, reflects a different position toward documentary forms. The images can be traced back to ID photographs and to archive material, which even if they are self-reflexive and resort to Ruff's own portraits, constitute an apparently legitimate documentary form or an interrogation thereof. Since the series reflects a historical practice, stemmed by its institutional use and its media circulation, it becomes an admissible photographic expression, reflecting the ever-recurring truth claim of the photographic.

The emphasis, in Ruff's own discourse and in the series' historiography, on the exploitation of a historical machine used by the police, whose result was seen every day in the news, shows how the relationship to the real – even in the work of an artist who stands for the photographic as constructed reality, a dimension fully acknowledged by critics – is extremely resilient. The use of digital technologies in the various portrait series is thus subordinated to a more widespread interrogation of photographic representation, hinging on both the historical exploration of retouching techniques and the processualization thereof in his images. As such, the confrontation of the regular and alternative portraits serves as a heuristic tool expounding Ruff's explorative work process. In the context of the comparison of digitally retouched images either associated with a documentary context or in a post-photographic reading, the reception of the portraits reveals interesting interstitial potentialities. Ruff's historiography has predominantly acknowledged his work in connection with Düsseldorf, either as an individual photographer necessarily concerned with the real, or through group projects addressing documentary forms. However, his portraits also possess a distinct historiography, connected to post-human imagery, which hardly appears in his "traditional" historiography. One of the few examples that combines Ruff and Burson – and one of the rare scientific studies of Ruff's work – is Patricia Drück's doctoral dissertation on the portraits.[230] The object "Thomas Ruff" is clearly constructed in the trail of a documentary discourse, which has as a matter of fact proven extremely contradictory and paradoxical. Visible retouching or post-human bodies seem irreconcilable with its underlying principles. The appraisal of this oriented discourse shows that Ruff has yet to be scientifically explored. His work has chiefly been considered by critics, curators and gallery owners, and its circulation is primarily connected to exhibitions and catalogues. An exhaustive institutional study of his work, through the evaluation of the role of the Johnen and Schöttle gallery, the Mai 36 Gallery, the Zwirner Gallery,

230 Patricia Drück, *Das Bild des Menschen in der Fotografie. Die Porträts von Thomas Ruff*, op. cit., chapter "Hybride Gesichter," p. 57 – 63.

the influential collector and editor Lothar Schirmer and the numerous supporters of his work, would provide insight into the construction of the "Düsseldorf School" – in that case much more a commercial label than an art-historical category. "[The Düsseldorf School] is a functional book for the American market, because a label simplifies things, everyone is able to put you in a box and then follow you," Thomas Ruff recalls Lothar Schirmer saying about Stefan Gronert's book.[231] Yet, as mentioned earlier, Gronert himself deconstructs the very idea of such a school, while editing a book contributing to its perennation.[232]

The appraisal of Ruff's confrontation with portrait photography shows to what extent his strategy, which explicitly confronts the historicity of retouching and the implications of its use in contemporary photography, relies on a meta-reflexive discourse addressing image production and perception. While Ruff retains a personal attachment to the objects he represents – he, for example, repeatedly argues that his *Porträts* are just two-dimensional images but that the depictured individuals are also his friends, intermingling artistic position with personal appraisal – his portraits and alternative portraits series address an interrogation of the circulation and the inherent mechanisms of such images, questioning contemporary visual culture through one of the most familiar types of image, the portrait. The early reception of this body of work, which formally, conceptually and technically often echoes post-photographic images, shows the resilience of the documentary tag that his filiation has associated him with. Although formally very similar to various post-photographic images, which to a certain extent reproduce documentary protocols – and particularly those defining portrait photography –, both sets of images are associated with discrete contexts and histories. Ruff's retouched portraits are somehow dismissed, as if the overt manipulation deprived his photographs of their real identity.

231 See interview of Thomas Ruff by Gabriele Naia, "Thomas beyond the Surface," at www.italy.exhibart.com, op. cit.

232 Stefan Gronert, "Photographische Emanzipation," in *Die Düsseldorfer Photoschule*, op. cit., p. 13–15.

PART 4

GENERALIZATION
GENERALIZATION
GENERALIZATION
GENERALIZATION
OF
DIGITAL
DIGITAL
DIGITAL
DIGITAL
AESTHETICS IN
DÜSSELDORF
DÜSSELDORF
DÜSSELDORF
DÜSSELDORF

(1999–2015)
(1999–2015)
(1999–2015)
(1999–2015)

The overall shift from a period of emergence to a generalized use of digital technologies in the work of Düsseldorf photographers occurs progressively. Yet several new processes and strategies introduced in the late 1990s clearly point to a noticeable change in the approach toward image making. During these years, Thomas Ruff starts to focus on recycled low-resolution images found on the Internet, explicitly addressing the specific visual culture that has arisen alongside the emerging network. He addresses the digital in a much wider context than through capturing or retouching technologies. Like Gerhard Richter or Hans-Peter Feldmann before him, Ruff has already recycled media images in order to explore their formal and semantic construction and to evaluate the role of the viewer perceiving them, notably in the *Zeitungsfotos* series. But the use of images captured on the web, the largest imaginable image database, addresses a global visual economy, the chief vector of knowledge and ubiquitous reference, whose impact on visual culture has yet to be determined. The implications of digital technologies at this point surpass their strict use as tools, addressing visual culture more generally. His *nudes* series, started in 1999, based on pornographic *jpegs* found on the web, reflects an interrogation of the digital not as a mere retouching device, but as a core mechanism of a visual economy and its consistent visual experience. The year 1999 also marks several important transformations in Andrea Gursky's oeuvre. He generates an image by digitally stretching a photograph realized three years before: *Rhein I* (1996, Fig. 5), severed from contextual elements that disturbed Gursky's view of the river,[1] has been enlarged horizontally, creating an elongated version of the source image: *Rhein II* (1999). This strategy undermines an important optical function of photographic depiction and its common theoretical understanding: the photograph as imprint of reality defined by an indexical bond. The photograph loses its strict referentiality, transgressing a parameter that is often used to define photography. The comparison with the Bechers, whose approach originally aimed at codifying and objectifying that very indexicality within the limits of photographic representation, is particularly revealing of Gursky's position. His predominantly pictorial strategy embodies a new step in the use of digital technologies, the acceptance and increased usage of which produces new types of photographic practices. The relationship with reality that photography supposedly represents and the modalities with which the medium constructs these realities undergoes considerable reconfigurations. Jörg Sasse used these technologies as early as 1993, but 1999 marks a shift in his strategy. His website *c42.de*, created in 1999, reflects upon photographs as part of database systems, defined less by indexicality than by circulation and use. His generic type-images document a visual culture and a habit of spectatorship, rather than any specific content. These new strategies constitute a step onward from the idea of the "credible invention of reality" coined by Matthias Winzen in his commentary on Ruff images of the 1980s

1 See *supra*, p.172 – 173.

and 1990s.[2] The generic photographs of Andreas Gursky, Thomas Ruff and Jörg Sasse operate as images of reality, but not through an indexical, referential system that could be traced back to a specific moment in time or space. They rather address the mnemonic reality of the observer and his visual culture, when confronted to a particular visual impulse. In this process, both digital retouching and digital image circulation systems contribute to the constitution of a generic (picture) world, specific only through its individual perception. Its implications go beyond the strict idea of verisimilitude, suggested earlier to define Ruff and Gursky's production of the 1990s. These new strategies rather enact an increasing autonomization of the photograph and a focus on the photographic apparatus itself.

The visibility of digital retouching, the appropriation of digital material or the analogue approach to digital mechanisms also brings forth a new critical approach toward those objects. While in the Düsseldorf context the period of emergence of digital technologies has often produced the disregard of the used technologies in the critical discourse, the period of generalization rather shows the systematic mention by critics of the role of digital tools – particularly in Ruff's and Gursky's case. The first publications of scientific articles explicitly addressing and solely focusing on those technological changes appear concomitantly. Kai-Uwe Hemken, for example, published in 2000 one of the first articles to discuss the role of these tools in the work process of Ruff and Gursky, while inscribing these practices as much in the history of antecedent self-reflexive approaches (e.g., Gerhard Richter and the Bechers), as in the history of the theoretical debate surrounding the used technologies (e.g., Vilém Flusser or William J. T. Mitchell).[3] In the 1990s, the digital work of Ruff, Gursky and Sasse is either read in connection with the unquestioned German documentary paradigm or through a critical rhetoric specific to painting. While this history hardly crosses the theoretical debate surrounding post-photography in the 1990s, the turn of the decade clearly marks a shift in this regard. The role of the digital in their production is increasingly taken into account and its implications interrogated.

As such, this body of work is both confronted by the theoretical framework of the post-photographic corpus and by its relationship with the documentary. The issues raised by the (allegedly) paradoxical concurrency of artistic positions, stemming from the relationship with reality and the potentiality of digital manipulation, are also increasingly made explicit in their respective historiographies. Mirjam Wittmann's quote from the *Objectivités* catalogue, addressing Ruff's large scale *Porträts*, explicitly addresses the (hypothetical) digital "manipulation" and questions its impact on the image's documentary

2 Matthias Winzen, "A Credible Invention of Reality," in Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979 – heute*, op. cit.

3 Kai-Uwe Hemken, "Von Sehmaschinen und Nominalismen. Anerkennungen zur digitalen Fotografie von Andreas Gursky und Thomas Ruff," in Monika Steinhauser and Ludger Derenthal (ed.), *Ansicht, Aussicht, Einsicht. Andreas Gursky, Candida Höfer, Axel Hütte, Thomas Ruff, Thomas Struth. Architekturphotographie*, exhibition catalogue (Kunstgeschichtliches Institut der Ruhr-Universität Bochum, Museum Bochum, 2000), Düsseldorf, Richter Verlag, 2000.

claim.[4] The acknowledgement of this parameter not only shows an awareness of technologies used by Düsseldorf photographers. It concomitantly reveals the fact that the existence and use of these new tools are read in a changed understanding of the depiction of reality. Ruff's regular *Porträts* are confronted with their ability to reflect the real, as they could be potentially manipulated. In this context, the increasing use of digital technologies echoes new representational conceptions. In the work of Sasse, Ruff and Gursky of the first decade of the twenty-first century, the digital is increasingly – even exponentially in Gursky's case – used, acknowledging the reality of digital technologies and their impact on society. These technologies have become central in visual culture and in image-making processes of these photographers, and while Thomas Struth and Candida Höfer did not adopt them at the time – Struth will eventually digitally retouch images in 2008[5] and Candida Höfer will start to use digital cameras in the late 2000s[6] –, image production without their use is by now hardly conceivable for the aforementioned three.

4 Mirjam Wittmann, "Blow-Up. Grand format et impact visuel," in *Objectivités*, exhibition catalogue, op. cit., p. 78.

5 In his series on complex machinery in research facilities such as the Max Plank Institute of Plasma Physics or space exploration facilities such as NASA's Cape Canaveral center. See Anette Kruszynski, Tobia Bezzola and James Lingwood (ed.), *Thomas Struth. Photographs 1978 – 2010*, Munich, Schirmer/Mosel, 2010.

6 Although Candida Höfer occasionally uses a digital camera, the fact that the images have not been digitally "enhanced" or "altered" is often stressed. See for example the press release of her exhibition at the Ben Brown Gallery, *Candida Höfer. A Return to Italy*, London, 2013. Available at http://www.benbrownfinearts.com/exhibitions/65/overview, accessed on August 13, 2018.

A COMPLEX COMPOSITES: ANDREAS GURSKY'S GENERIC WORLD

1 FORMAL HOMOGENIZATION AND GRIDS

In the early 1990s, digital technologies used in photography are limited to the collaging of shots (e.g., *Paris, Montparnasse*, 1993) or light retouching (e.g., Thomas Ruff's *Haus Nr. 1 I*, 1987). In the 2000s, photographs such as *Hamm, Bergwerk Ost* (2008), the outcome of much more complex computing systems, are almost constructed from scratch. Gursky's work until the late 1990s and the photographs produced afterwards can consequently be subsumed schematically into two categories: retouched photographs and constructed composites. This can also be resolved in representational terms. Until the 2000s, Gursky has produced images that considerably depend on the depicted reality, even if compositional strategies play an increasingly important role in his work. As described in section two, Gursky commonly opts for particular subjects and camera angles of a chosen scene, which he retouches in order to correspond to his formal requirements. The process of *finding* a suitable subject, one that fits into his mind frame and compositional schemata, tends to be gradually inverted toward the end of the decade. In the 2000s, the concept of *building* images, rather than adapting photographic material, better defines Gursky's image production. Series such as *F1 Boxenstopp* (2007) illustrate that process. The images are made out of numerous shots[7] and enlarged to considerable dimensions; the composites of the series

7 See for example Stefan Beyst, "Andreas Gursky. From a Spirit's Eye View," op. cit.

are more than five meters in width. Gursky composes the image he intends to produce with photographic fragments – racecars with mechanics, audience, etc. – adapting his work to the captured reality and taking more liberties with the concept of photographic depiction.

Fig. 94: Andreas Gursky, *Hamm, Bergwerk Ost*, 2008 (250 × 176 cm)

These transformations and formal changes correspond, to a certain extent, to technological developments and to the availability of retouching tools, although the difference is not solely technical. Gursky correspondingly shifts his relationship to reality. In *Hamm, Bergwerk Ost* (2008), the photographed clothes of the mine workers only serve as a starting point (see Fig. 95) for a painstakingly reconstructed tableau (Fig. 94), which decontextualizes the workers from any specific context, only to retain the allegorical evocation of mining in general. Throughout the decade, Gursky clearly develops a tendency toward the composition of such technically complex tableaus, whose iconic character prevails. Formally, these images based on photographic fragments can often be identified easily as being composites made after 2000. Often highly saturated colors, reconstructed geometrical spaces, limited chromatic environments and high contrasts differentiate them from older images, which retain more "conventional" photographic features (e.g., colors defined by the used film, etc.).

These formal transformations further echo a discursive shift toward documenting practices that occurs throughout the 1990s. Gursky recurrently argues that such iconicity operates *as a document*, while the relevancy of the indexical record of a particular place and moment in time decreases. Commenting on the work process of *Rhein I* (1996) he states that such aestheticized "view of the Rhine cannot be obtained in situ; a fictitious construction [is] required to provide an accurate image of a modern river."[8] Gursky correlates the constructed

8 Andreas Gursky quoted in Annelie Lütgens, "Shrines and Ornaments. A Look into the Display Cabinet," op. cit., p. 9.

image with the idea of accuracy, suggesting his stance toward the representation of the world, where indexicality or protocoled recordings are discarded. In fact, Gursky considers that a more conventionally documentary photograph, with the existing industrial landscape, bears too much connotation, as industries are typically associated with the past (e.g., the work of the Bechers). Such an approach, based on a constructed tableau, embodies a differing relationship with the reality it represents: Gursky's work assumes a painterly and artistic dimension, expressed by the large formats[9] and their implicit "symbolic and subjective" character.[10] His large-scale photographs stand without any possible ambiguity for an explicit artistic position, unlike the Bechers' typologies, whose perception has evolved in time – from sheer industrial documentation to the concept of "anonymous sculptures." Nevertheless, his images clearly endorse a relationship with *a* reality, even if it is not a depicted or recorded reality depending on the technical capturing apparatus. Gursky's depiction of a globalized world, often acknowledged by his historiography,[11] does not aspire to systematically depict or describe a particular moment in time or space – despite the fact that his images often re-enact the formal construction of a pregnant snapshot[12] – but aims rather at confronting the viewer with his preconception of such a potential moment.

Fig. 95: Original picture taken by Andreas Gursky on site (screenshot from Jan-Schmidt-Garre, *Gursky, Fotograf*, 2009)

9 Olivier Lugon, "Avant la 'forme tableau,'" op. cit., p. 7.

10 See Matthew Biro, "From Analogue to Digital Photography. Bernd and Hilla Becher and Andreas Gursky," *History of Photography*, Vol. 36, No. 3, 2012, p. 357.

11 See for example Pamela M. Lee, *Forgetting the Art World*, Cambridge (MA), MIT Press, 2012, chapter "Gursky's Ether," p. 69 – 105 or Christopher Williams-Wynn, "Images of Equivalence: Exchange-Value in Andreas Gursky's Photographs and Production Method," *Photography & Culture*, Volume 9, No. 1, March 2016.

12 The paradox between artificial composites and compositional features reminding a decisive moment has been discussed by Thomas Weski. See Thomas Weski, "Der privilegierte Blick," op. cit., p. 17.

Fig. 96: Andreas Gursky, *Bahrain I*, 2007
Fig. 97: Hermann Zschiegner, *After/Before Gursky (Bahrain I)*, 2009

However, how does this dimension accord with the inheritance of documentary photography that the Bechers students have – paradoxically – been analyzed by? According to several scholars – most prominently Michael Fried and Jean-François Chevrier – compositional strategies used in large-scale photography (e.g., Jeff Wall or Düsseldorf photography) have historically contributed to the inscription of the medium in an artistic context. In the history of Düsseldorf photography, how can it be explained that the young generation's work is considered artistic because it relies on compositional strategies associated with painting (i.e., correlated with abstract expressionism), while at the same time being inscribed in a documentary tradition (i.e., Sander or the Bechers) which, although it also has a specific style, originates in an aspiration of objectivity? In Gursky's case, as has been shown previously, the apparently paradoxical co-presence of such strategies is mostly achieved discursively, the photographers and numerous commentators inscribing his work in a documentary rhetoric. However, is there a formal translation of such aspiration? To which extent do digital tools contribute to that rhetoric? And how are they connected to the process of documenting?

The comparative work of Hermann Zschiegner can provide interesting information about aspects of this formal process. The Belgian artist recovered the original images of several photographs Andreas Gursky took in the mid- and late 2000s, using the Google Earth interface. For several recent works by Gursky taken in the United Arabic Emirates and Bahrein, Zschiegner produced original images using same camera angle and scale, revealing the post-production the originals shots have undergone. *Before/After Gursky (Bahrain I)*, created in 2009, shows Gursky's composition (Fig. 96) and the photograph of the original F1 racetrack it is based upon (Fig. 97). The spatial construction of the image first marks the first patent difference. Gursky's photograph offers a plane surface, where various perspectival

shots are sewn together. The common all-over structure balances the image and suggests an abstract pattern. The limited tonal value further enhances, in terms of visual effect, Gursky's characteristic blending of a three-dimensional photograph and a two-dimensional abstract image (see also Fig. 98 and 99).

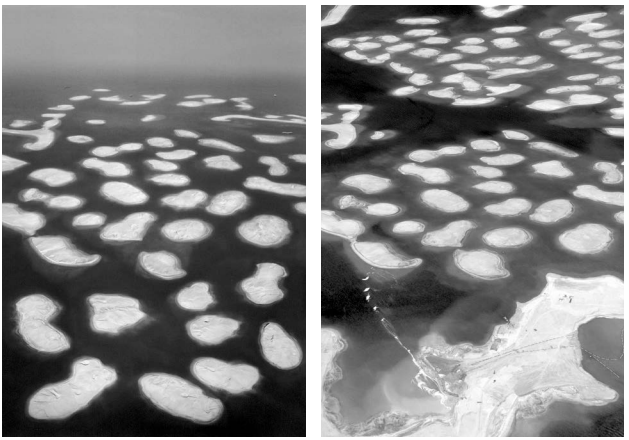

Fig. 98: Andreas Gursky, *Dubai II*, 2007
Fig. 99: Hermann Zschiegner, *After/Before Gursky (Dubai II)*, 2009

As Stefan Beyst argues, Gursky uses a "restricted array" of colors in his images in order to artificially interweave heterogeneous elements, increasing "repetitiveness" and general homogeneity.[13] In the case of Bahrein, some elements with disturbing color values (e.g., concrete structures) were eliminated, and in other examples – Stefan Beyst mentions the *99 cent II* diptych (1999) – the number of colors seems to have been reduced, stacks of merchandise being colorized accordingly.

Colors thus play an important role in the differentiation of Gursky's image in terms of referentiality. If they possess an aesthetic function, their limited use also increases the generic impression the pictures entail. *F1 Boxenstop*, rather than a particular race, team or racetrack, addresses Formula 1 in general (its aesthetics, a potential narrative, etc.), showing a "condensed reality,"[14] as Gursky argues. A core tendency of his image construction strategies in the second phase of his composites thus resides in a general homogenization, resulting from the limitation of tonal values and the continuation of the trend toward bi-dimensional constructions. These processes are already underway in digitally built images such as *Atlanta* (1996), but whole series such as *Bahrein* and *Dubai World*, *F1 Boxenstop*, *Pyongyang* and numerous individual images (e.g., *Untitled XIII*, *Mayday V*, *Kuwait Stock Exchange*, *PCF Paris*, etc.) follow that pattern in later years.

13 See Stefan Beyst, "From a World Spirit's Eye View," op. cit.
14 See Stephan Berg, "Die Ordnung der Welt," in Stephan Berg (ed.), *Unschärferelation. Fotografie als Dimension der Malerei*, op. cit., p. 40.

Another particularly visible formal trend develops throughout that period. Gursky builds a coherent underlying formal system that allows him to generate pictures based on the same architecture: numerous images of the 2000s rely on a small meshed grid, orthogonal to the photograph or leaned on the perspective of the picture, which is "filled" with various types of content – islands, people, cows or umbrellas. *Nha Tran* (2004, Fig. 100), *Fukuyama* (2004) or *Rimini* (2003, Fig. 101) have a very similar compositional pattern. With strictly orthogonal structures (such the *F1* series), this perspective grid constitutes Gursky's main configuration, used and applied in a similar – although less strict – manner to the Bechers' protocol. The grid, depicted from above and often occupying 9/10 of an image, can be seen in that context less as a strategy to formalize reality than as a pre-existing compositional tool, *filled* with various picture elements. Gursky reverses the Bechers' strategy, applying considerable authorial control to the depicted (and often digitally constructed or corrected) scenes.

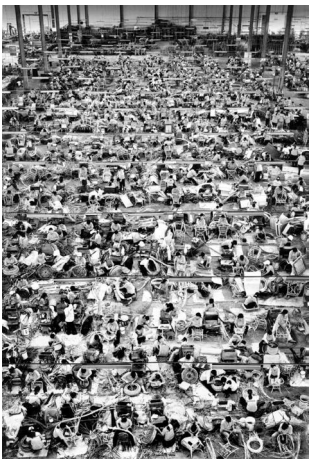

Fig. 100: Andreas Gursky, *Nha Tran*, 2004

While Gursky submits the depicted objects to an orthogonal codification in the 1990s, he progressively fills compositional grids in the 2000s, aided by – but not solely influenced by – increasingly elaborate retouching tools. This grid paradoxically emerges *from* his early interrogative compositional posture: while in the 1990s Gursky bends reality to correspond with the frontal grid structure, he uses an autonomous grid in the 2000s as core architecture and starting point for his tableaus. As such, this rendering mechanism can be correlated with generative principles underlying Sasse's *Speicher* projects or Ruff's generated images, which is particularly evident as the picture elements he positions on his grids are monochromatic (e.g., the orange uniforms in Nha Tran, the white traders in *Kuwait Stock Exchange*, the red gymnasts in *Pyongyang I*, etc.), metaphorically echoing the pixel as a discrete and fundamental imaging component. Digital technologies play a role in the composition of such generated

images. In the *Pyongyang* series, for example, he has composed a grid with pre-existing material, combining fragments of photographs to produce a seamless image of North Korean gymnasts. The scenes are in themselves spectacular, but Gursky increases their impact by creating large-scale tableaus.[15] But these tools also allow excluding elements that do not correspond to the grid or fall outside of its patterns. In *Dubai II* (2007), Gursky has removed the islands differing in size, shape and texture from the round island type he aims to represent, and has also homogenized the ocean depth, in order to create a more consistent background to place the islands onto.

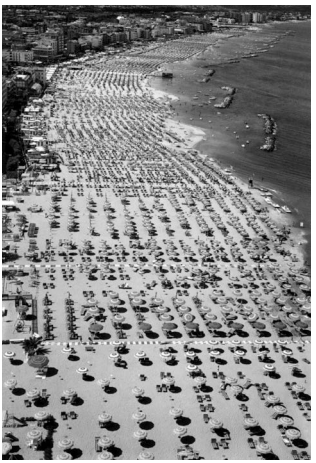

Fig. 101: Andreas Gursky, *Rimini*, 2003

The process of reducing picture elements to monochromatic pixels is almost explicit if considering the frontally depicted color panels, the Arirang Festival[16] gymnasts are holding in front of them in the tribunes in *Pyongyang I* (see Fig. 102) to create giant images, reflecting the country's iconography. The choice of uniforms or color panels, present in most images that depict humans, contributes to a general de-specifying and uniforming process, addressing corporate and generic (rather than specific) views and the image architecture in a digital context. Monochromatic homogenization thus also plays a key role in the process of digitizing content. One aspect of Gursky's work of the 2000s, especially if compared to the two-dimensional construction of photographs of the 1990s, seems to contradict this position, however. If many photographs possess an orthogonal construction – e.g., *Avenue of the Americas* (2001) – a majority of his recent work is based on

15 Jean-Michel Garre,"One-Half Revolution and Everything Turns Red. Andreas Gursky in North Korea," *032c*, No. 13, Summer 2007. Available at https://032c.com/one-half-revolution-and-everything-turns-red-andreas-gursky-in-north-korea, accessed on June 6, 2018.

16 North Korean mass gymnastic performance, celebrating the country, its workers and its leaders, created in the 2000s. See for example "Welcome to the Strangest Show on Earth," October 1, 2005. Available at http://www.theguardian.com/world/2005/oct/01/northkorea, accessed on November 29, 2017.

a perspective grid, with a high viewpoint. Through various strategies Gursky had tended toward two-dimensional constructions in the 1990s (vertical shots, orthogonal grids in the picture, etc.), which remain in some series such as *F1 Boxenstopp*. But most photographs enact a shift back toward a Euclidian space, with apparent or almost visible centered vantage points at the top of the pictures. The generative approach and the codified formal result clearly distance these tableaus from anterior photographs with similar camera angles. Although re-inscribed in a geometrical (rather than a pictorial) space, they reflect a proactive approach in Gursky's image-making processes, which forsake indexical value, replaced by compositional strategies.

2 INDEXICALITY, VERISIMILITUDE AND IDEAL TYPES

Reception of Gursky's realities

In referential terms, this shift can be translated through the emphasis of "the iconic quality" of his images, while the "indexical quality" has been weakened, using Matthew Biro's terminology,[17] which also brings along a more uninhibited position toward the image capturing process: besides using multiple source images to construct photographs, Gursky casts characters, such as some missing "pit stop chicks" (*Boxenluder*) for the *F1 Boxenstopp* series, which are added to the picture.[18] Despite this often mentioned iconic dimension, the fact that Gursky's aim resides in making "images of image" rather than "image[s] of the world,"[19] emphasized by Peter Galassi in the 2001 MoMA catalogue, has hardly been reflected upon until the recent book by Eva Witzel, who reconstructs the relationship of Gursky and model images.[20] More generally, the mention and in-depth exploration of digital technologies playing a role in this process has become a commonplace throughout the 2000s. Numerous critical and several scientific articles and texts have extensively discussed particular images, gathering a certain amount of knowledge – sometimes original, more often cross-referenced – about their genesis and technical specificities. The concept of Gursky's constructions as reflections of reality has been specifically addressed by several scholars, most convincingly by Jens Schröter[21] (2009) and Matthew Biro[22] (2012). Clearly, factual knowledge about the use and role of the digital in Gursky's work has increased, and the first articles published in strictly scientific peer-reviewed journals have appeared. Biro's recent article was written for

17 Terminology used by Matthew Biro. See Matthew Biro, "From Analogue to Digital Photography. Bernd and Hilla Becher and Andreas Gursky," op. cit., p. 358.

18 Ralf Schlüter, "Reporter des Weltgeistes," *Art. Das Kunstmagazin*, No. 3, March 2007, p. 51.

19 Peter Galassi, "Gursky's World," op. cit., p. 28.

20 Eva Witzel, *Die Konstitution der Dinge. Phänomene der Abstraktion bei Andreas Gursky*, op. cit.

21 Jens Schröter, "'Wirklichkeit ist überhaupt nur darzustellen, indem man sie konstruiert' (Andreas Gursky)," in Martina Hessler and Dieter Mersch (ed.), *Logik des Bildlichen. Zur Kritik der ikonischen Vernunft*, Bielefeld, transcript Verlag, 2009.

22 Matthew Biro, "From Analogue to Digital Photography. Bernd and Hilla Becher and Andreas Gursky," op. cit.

the British journal *History of Photography*, exemplifying the shift from critical to academic literature. While it is too early to ponder the scholarly literature, and while an exhaustive overview of the critical literature is unmanageable, it nevertheless seems necessary to evaluate differences in perception of his oeuvre between the two productive phases we have established, before and after 1999. The relationship between digital compositing and the idea of truthfulness or documentation in photographic representation ought particularly to be discussed in order to understand the reception and status of Andreas Gursky's work of the 2000s. As has been established earlier, his early production is often associated with documentary *because* of digital interventions. Considering the evolution of his work in later years, and the often dogmatic positions toward photographic manipulation, such positions should be re-evaluated. Clearly, the merging of two photographs in order to produce an extended, orthogonal view of a large building (*Paris, Montparnasse*, 1993) could more easily be assimilated to a documentary rhetoric than to an enlargement of an existing Rhine view resulting of extensive post-production work (*Rhein II*, 1999), or a tableau almost composed *ex nihilo* with photographic fragments (e.g., *F1 Boxenstopp* series, 2007). Not only can the study of such discourses inform the understanding of Gursky's oeuvre, but it is also necessary to reflect broader changes and shifts in the understanding of reality and its representation modalities.

One constant parameter in Gursky's reception, independent of comments on formal and aesthetic developments of his work, resides in the connection of his images with the reality it supposedly represents. Surprisingly, reality not only remains an important issue in the discourse on his work. Even more so, the indexical connection to that reality remains extremely resilient, with theoretical articulation and references reminiscent of anterior debates on digital or post-photography in the 1990s. In his 2012 text addressing ideal types in Gursky's oeuvre, Frederik Stjernfelt, for example, uses Peirce as theoretical reference to explain the idealization process, which can be correlated to the concept of generic world, expressed above. Sternfelt explains that process with Peircian terminology, formally defining it by cleaning the "noise" of a picture in order to make it more "precise."[23] He further insists that the use of digital retouching or compositing techniques in order to produce an idealized view "is not a falsification nor the introduction of subjectivity into the work – rather, it is the attempt [...] to state something, objectively, about the ideal type of the phenomenon depicted."[24] The idea that Gursky somehow remains a documentary photographer pervades this claim, making it necessary to justify the digital manipulation. In the introduction of his text, Sternfelt interestingly emphasizes that the photographer allegedly "lies close to the central virtues of documentary photography," which is exemplified by

23 Frederik Stjernfelt, "Ideal Types Made Visible," in *Andreas Gursky at Louisiana*, exhibition catalogue, (Louisiana Museum of Modern Art, Humlebæk, 2012), Ostfildern, Hatje Cantz Verlag, 2012, p. 113. The quotation marks reflect Peirce's words, but their exact source is not mentioned in Stjernfelt's text.

24 Ibid.

his "focus on social issues" or "meticulous attention to photographic detail." But his work "exceeds such categorization – to a great extent thanks to the photographic and production techniques used."[25] The idea of digital tools and formal parameters (size of prints, etc.) as improvement emerges, an idea most famously advocated by Michael Fried – as Matthew Biro notes – especially highlighting authorial control.[26] Thomas Weski also emphasizes this particular consequence – or precondition – of digital technologies, which allows Gursky to control his images according to his needs or plans. While he still relies on their photographic character, he (allegedly) creates "fiction out of facts."[27]

The idea of a supplemental value of digital retouching – predominantly discussed in Fried's case in order to exemplify his claim about the importance of photography as an art form in late twentieth century[28] –, thus occupies an important function in the discourse on his work, often using Gursky's own words addressing that issue. Alix Ohlin for example, discussing the sublime and globalization in Gursky's work,[29] quotes an interview by Veit Görner in which Gursky states his position toward documenting industrial companies:

> *Most of them had a socioromantic air I hadn't expected. I was looking for visual proof of what I thought would be antiseptic industrial zones. If these companies had been systematically documented one would have had the feeling one was back in the days of the Industrial Revolution. After this experience I realized that photography is no longer credible, and therefore found it that much easier to legitimize digital picture processing.*[30]

The use of such a quote by Ohlin reflects a tendency to consider that reality as such has to be upgraded or transformed in order to be of interest, a process in which digital technologies are central. Numerous commentators precisely describe how this transformation is achieved, giving very concrete examples, such as spatial transformations, perspectival changes in the images, highlighting of elements and idealization. The connection of such images with visual culture and the fact that Gursky's work might be interpreted as being the depiction of a picture world rather than the physical world, endorsed by this research, is often disregarded. This often leads his historiography to have recourse to index-based definitions of photography (e.g., Frederik Sternfelt[31]), rather than addressing the relationship between

25 Ibid., p. 111.
26 Matthew Biro, "From Analogue to Digital Photography. Bernd and Hilla Becher and Andreas Gursky," op. cit., p. 366.
27 Thomas Weski, "Der privilegierte Blick," op. cit., p. 17.
28 Michael Fried, *Why Photography as Art Matters as Never Before*, op. cit., p. 165 – 166.
29 Alix Ohlin, "Andreas Gursky and the Contemporary Sublime," *Art Journal*, Vol. 61, No. 4, Winter, 2002.
30 Andreas Gursky in an interview with Veit Görner, excerpt posted online at www.oasinet.com/post-media/art/gursky.htm, translated and quoted by Alix Ohlin, "Andreas Gursky and the Contemporary Sublime," op. cit., p. 28 – 29. The interview was originally published in Veit Görner, "... I generally let things develop slowly," in *Andreas Gursky. Fotografien 1984 – 1998*, op. cit., p. 7 – 10.
31 It ought to be mentioned that Stjernfelt doesn't endorse a strict indexical position, but the mention of C. S. Peirce in a text on photography clearly associates it with a very specific type of discourse connected with semiology.

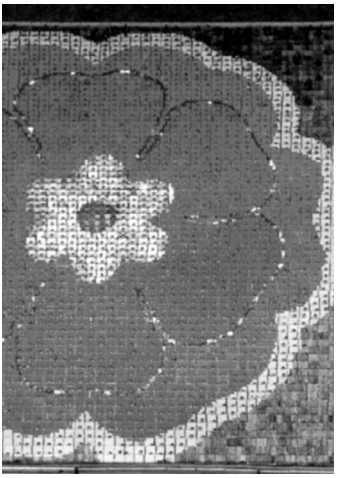

Fig. 102: Detail of *Pyongyang I*, cover of Thomas Weski (ed.), exhibition catalogue (Haus der Kunst, Munich, 2007), Cologne, Snoeck, 2007

Gursky's imagery and photographic realities. As Thomas Weski relevantly argues, one of the main reasons for the fame of Gursky's work probably resides in its accessibility, the motives of his images relying on "visual codification of collective experiences."[32] The organization of reality fragments into readable and accessible tableaus thus does not reflect globalization as a physical reality through its symptoms (skyscrapers, stock exchanges, manufacturing industries, luxury goods, etc.) as much as it addresses the globalized perception of such reality, increasingly standardized through shared technologies and economies. As such, his position is one of the few to point at the role of images in that perceptive process, and more generally to address Gursky's work as a reflection of visual culture rather than a physical reality. While the "experience" is often stressed, the notion of transparency through which that experience is mediated often remains central. Interestingly, Gursky explicitly reflects upon the connotations of certain types of images (i.e., photographs of industrial architecture). While the Bechers' images to a certain extent answered to the need for an objectified view of industrial sites, their reading today is historical – their images' non-style can clearly be identified as style – and marks a shift in the perception of the objectified buildings: industrial architecture being a thing of the past, its perception clearly bears connotations (i.e., the "socioromantic air"[33]). As such, Gursky's composites can be interpreted as the attempt to escape a certain type of photographic representation, formulated by his teachers, whose tools he has paradoxically inherited. His oeuvre thus consists in an alternative deployment of the Bechers' protocol.

32 Thomas Weski, "Der privilegierte Blick," op. cit., p. 19.
33 Andreas Gursky in an interview with Veit Görner, op. cit., p. 28 – 29.

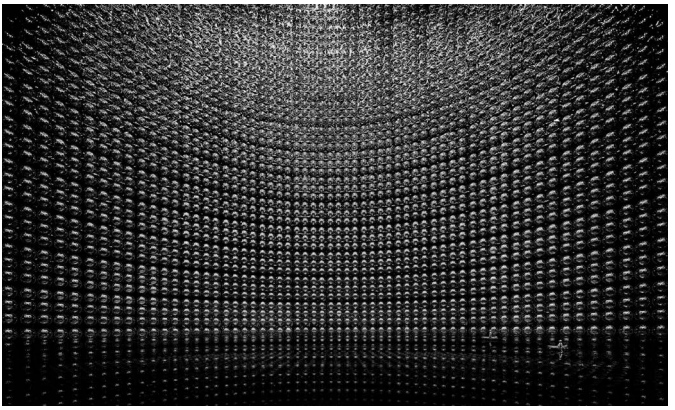

Fig. 103: Andreas Gursky, *Kamiokande*, 2007, (222 × 357 cm)

The global world and the images of the global world

As mentioned earlier, Thomas Weski embodies one of the few positions considering Andreas Gursky's work "as a [possibly] new form of document"[34] in which visual culture – rather than the idea of strict documentation – plays a central role. While most scholars rather connect Gursky to the documentary because of his connection with the German tradition or because of his own statements, Weski rather starts from his images, suggesting the equivalence between "the visual manifestation of the conception of the artist, the constructed evidence of his experience and the collective memory and association of the viewer."[35] This position allows a new interpretation of the aforementioned quote by Gursky on depicting industrial sites: the visual connotation of such photographs of industrial sites through historical examples (e.g., *New Topographics*, etc.), leads him to look for alternatives to the strictly indexical documentary approach. For instance, Gursky addresses the representation of some places and events he considers symptomatic of the (globalized) early twenty-first century – F1 races, club culture, luxury goods, the stock exchange, sports, leisure, high-rises – and thus reflects the place these events or places occupy in popular culture and their visual expression, rather than their actual existence. The concept of global world, often used in conjunction with Gursky's imagery, might in this case rather be reflected by a globalized image circulation system, rather than by its physical equivalent. Industry and its depiction clearly symbolize another era (e.g., the industrial, versus the electronic era), an era whose visual symptoms Gursky aims to reject.[36]

34 "Bilder [...] die aber auch als eine neue Form von Dokument angesehen warden könnten," ibid.

35 Ibid.

36 Marshall MacLuhan argues that an era is perceived as aesthetically existing, only once considered from the point of view of another era: the taste for nature or gardens is specific to the industrial revolution, the taste for industry specific to the electronic age, etc. See for example Marshall McLuhan, *The Mechanical Bride*, London, Routledge and Kegan Paul, 1967.

Interestingly, the focus on visual culture or the historicity of photographic representation is hardly reflected upon, despite the fact that Gursky himself and his historiography regularly quote the source images that inspired him in the production of his works. Quite often he mentions seeing an image of a site or a building in a newspaper or magazine, which – although the process is not formalized or visible as in Thomas Ruff's *Zeitungsfotos* – reflects the importance of the photographic depiction of a physical reality. Numerous publications either mention Gursky's recourse to media images or reflect upon particular photographs. *Art: Das Kunstmagazin*, a mainstream art publication, for example, notes in an article on the 2007 Haus der Kunst (Munich) exhibition that "Gursky finds his motives in magazines and newspapers, on television or on the Internet, and sometimes still directly when traveling."[37] Gursky predominantly works with images, which he stores in his "huge photo archive."[38] Some specific images have been particularly discussed from that perspective. *Kamiokande* (2007, Fig. 103) constitutes both historiographically and as a visual model a paramount example for the understanding of the picture-picture relationship in Gursky's work. Both Jens Schröter[39] and Greg Allen[40] address the picture using original photographs of the Japanese neutrino detector[41] in their respective articles, and this particular example is regularly quoted. Made by the *Kamiokande* team, freely available on their website and largely dispatched through various publications and websites, the original *Kamiokande* photograph (Fig. 104) both exemplifies the recourse to specific visual sources available on the Internet and shows what particular formal transformations Gursky undertakes.[42]

While the source image has been made with a fisheye lens, Gursky corrects the geometrical space, producing a more horizontal image, in compliance with his common orthogonal grid structures. The color diversity is reduced to gold and black, which is particularly visible when zooming in on the little boats with their operators (respectively red and white in the source image, yellow-gold in Gursky's). The structure of the water disappears; Gursky only uses it as a reflective surface improving the theatrical effect of the observatory. The point of view is

37 Ralf Schlüter, "Reporter des Weltgeistes," *Art. Das Kunstmagazin*, No. 3, March 2007, p. 51.

38 Andreas Gursky in ibid.

39 Jens Schröter, "'Wirklichkeit ist überhaupt nur darzustellen, indem man sie konstruiert' (Andreas Gursky)," op. cit., p. 208 – 2011.

40 Greg Allen, "Gursky Goods," available at https://greg.org/archive/2013/07/18/gursky-goods.html, accessed on June 27, 2018.

41 The Kamioka Observatory is an underground solar neutrino detector filled with water operated by the Institute of Cosmic Ray Research of the University of Tokyo. See official website of the Super *Kamiokande*, www-sk.icrr.u-tokyo.ac.jp, accessed on September 10, 2018.

42 In a conversation between Christoph Schaden and Franziska von Hasselbach (Sprüth/Magers Gallery), similar examples are discussed; von Hasselbach recalls that Monika Sprüth provided the source image for Gursky's *Fukuyama* (2004), found in a Deutsche Bahn magazine. See "Das Phänomen Andreas Gursky. Sie glauben ja nicht, wie viele Helikopter ich schon geordert habe!," a conversation between Christophe Schaden and Franziska von Hasselbach, at http://www.christophschaden.de. Available at http://www.christophschaden.de/de/schreiben/interviewen/franziska-von-hasselbach/das-phaenomen-andreas-gursky, accessed on January 23, 2014 (site now offline). Published in a short version as "Phänomen Gursky. 'Die Betreuung von solch einem Künstler ist schon sehr komplex,'" *Photography Now*, No. 2, 2007.

lowered, the angle generating a steep perspective, reinforced by the increasingly bent horizontal lines. In combination with the huge 222 × 357 centimeter print, the image produces a sentiment of awe or a destabilizing effect, conveying Gursky's God topos.[43] The golden structure on the black background further enhances the idealization effect, imbuing the observatory with a mythical aura. In photographic terms, this can be interpreted as an "enhanced" image.

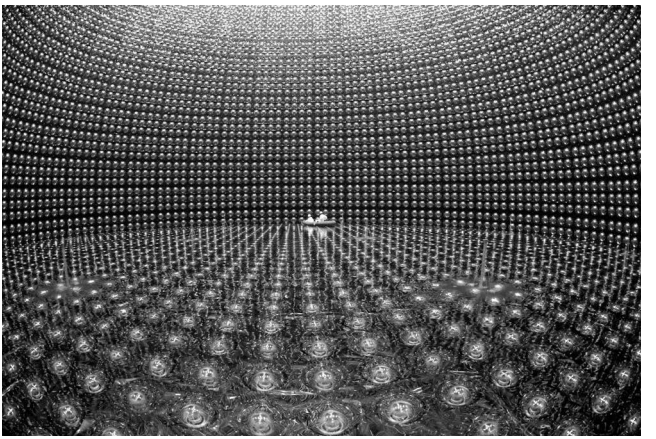

Fig. 104: Official photograph of the Kamioka Observatory, ICCR, The University of Tokyo, No. 15. *Started-Water Filling*, 2006

As Anne-Marie Bonnet (critically) notes, Gursky, with his "virtuosic technical skills," communicates "the magic of the place without construing it, re-auratizes it, [...] underlines its exclusivity."[44] In "economical" terms, the gold can further be associated with Gursky's interest in luxury goods, addressed in the *Prada* series (1996) or though the golden gas tank of *Qatar* (2012). In this recent work, Gursky depicts the inside of an empty liquid gas chamber of a ship. Creating a golden image and tagging it "Qatar" – a very wealthy Arab emirate – he clearly suggests a gold room, although the tank is made out of aluminum.[45] In that particular example, Gursky's "reality" is the projection of what the viewer associates with Qatar and the associations created by the golden structure. The photograph becomes a non-specific, symbolic image, rather than a strict document. It reflects what the viewer thinks

43 The recurrent procedure of reducing human characters to miniatures (i.e., microstructures) populating very large architectural or natural spaces (i.e., macrostructures) has been identified by numerous scholars and is also formulated by Gursky himself. See for example "Andreas Gursky in an Interview with Veit Görner: '...I generally let things develop slowly,'" in *Andreas Gursky. Fotografien 1984 – 1998*, op. cit., p. 5. Gursky's omniscient point of view has consequently been interpreted as a god-like position. See for example Stefan Beyst, "Andreas Gursky. From a Spirit's Eye View," op. cit.

44 Anne-Marie Bonnet, "'Pimp My World.' Zu Gursky's Bilderwelt zwischen Malerei und Photographie, Kunst und Welt," in *Frame #2*, op. cit., p. 103.

45 Press release for the exhibition *Andreas Gursky* (September 23, 2012 – January 13, 2013), curated by Andreas Gursky and Beat Wismer, Museum Kunst Palace, Düsseldorf.

of Qatar, rather than documenting any particular aspect of it.[46] If Gursky's work could be interpreted as having a critical and didactic dimension – I, Andreas Gursky, depict a gas reservoir and you, the viewer, imagine a golden chamber – the ambivalence seems irrelevant compared to the importance of the visual impact. Although Gursky's subjects might be categorized as being symptomatic of a shift of interest toward a globalized world – considering China or the Gulf states –, their formal treatment suggests that his work rather addresses a particular (occidental) view and visual formalization of globalization. The examples of *F1 Boxenstopp*, *Kamiokande* and *Qatar* show to what extent he confronts generic representations with a stereotypical understanding of these "new" territories, whose aestheticization serves both strictly pictorial and "documentational" purposes: in that process, the knowledge of the viewer itself plays a central role, as Gursky's imagery builds on these appropriated stereotypes from a collective visual memory. But their readability also derives from their formal enhancing and aestheticization, a process that participates in their homogenization.

Various image categories

Gursky's formal shift, occurring in the 1990s and consisting in a mathematical representation of the depicted images through a vertical point of view, grid patterns and orthogonal constructions, dissolves his images into picture elements, which become increasingly independent and autonomous in the 2000s. Until the late 1990s, Gursky's relationship to the depicted images relies on formal strategies that position what is captured in front of the lens – or the computer – in order to correspond to a two-dimensional construction, an increasingly autonomous picture world, snapped to a grid. The 2000s are defined by the production of constructed tableaus, with autonomous, often orthogonal, picture elements, resulting in digital composites, which although they might look either realistic – the 2010 *Ocean* series suggests satellite images, but only the emerged continents are photographs; the oceans have been generated – or primarily pictorial, derive from a similar generating process.

Throughout the 2000s, Gursky increasingly formalizes an abstract relationship to the world, which can be schematically broken down into two categories of composites, all proceeding from the reduction of pre-existing images – as much stereotypes and mental images as real images (e.g., found in magazines) – into type-images: the raster grid images and iconic photographs with singled-out elements. Raster grid images process image fragments, combining small elements (i.e., workers, cows, sunshades, etc.) into tableaus based on a structuring grid. More than aspiring to address a particular type of (source) image, these photographs are built upon recognizable fragments, embodying generic images extruded from discrete parts – and

46 An alternative interpretation could correlate the gas with wealth, as Qatar's income is mostly derived from oil and natural gas.

metaphorically comparing with pixel grids. Although some of these images pre-exist in reality – a photograph of the *Fukuyama* beef farm has been found by Monika Sprüth and served as a visual model[47] – these images are chiefly extrusions and multiplications of generic characters such as the trader, the worker, the Japanese cow, etc., somehow symptoms of a globalized economy. If these picture elements correspond to a certain extent to discrete elements that were digitally assembled it is not necessarily the case.

If photographs like *Kamiokande* or *Pyongyang I* possess a similar grid structure, their singled-out elements (e.g., the boat in *Kamiokande*, the globe and flowers in *Pyongyang I*) pose them as iconic images of different status, as installations like the Japanese neutrino detector are both visually and physically unique. Raster grid images fail to address a specific place or moment, despite the fact that titles are specific: *Rimini, Nha Tran* or *Fukuyama* depict *a* beach, *a* factory or *a* farm. Nothing stands out in the formal construction. The iconic *Kamiokande* or *Pyongyang I*, both based on pre-existing depictions of these places and thus output of pre-existing image archives, have a more special status, and a more specific "history." North Korea or a neutrino detector is something singular, while beaches or factories aren't. Similar to Thomas Ruff in the categorial construction of his *jpegs* series (see *infra*), Andreas Gursky works both with reductive strategies (he reduces a particular place of event to one depiction) and with opposite processes (he confronts a generic image with the multiple photographs of the viewer's visual culture). As such, their work could be associated with the two-directional movement of the Bechers' typological system: a specific building is singled out by comparison with similar buildings (differences appear), but its specific character also vanishes when compared to a multitude of similar shapes (differences wane).

47 "Das Phänomen Andreas Gursky. Sie glauben ja nicht, wie viele Helikopter ich schon geordert habe!," op. cit.

B
IMAGE RECYCLING AND APPROPRIATIVE POSITIONS

1 FROM "SKIZZEN" TO "SPEICHER:" IMAGES AND THE DATABASE IN JÖRG SASSE'S WORK

The observer plays a similarly important role in Jörg Sasse's work of the 2000s. How does a viewer assess a photographic image? Why does he like it or not? Why does he identify so easily its cultural or geographical origin? Why do family pictures seem familiar? What parameters of the image and what aspects of the viewer himself define the viewing experience? As has been established previously, Jörg Sasse's use of photography is primarily concerned with the visual properties of vernacular images and a collectively shared visual culture. He resorts to found images in order to unveil image selection processes and visual trends, inscribing them in their historicity by analyzing their formal features. While in the 1990s, these interrogations were manifested through the *Tableaus* – a series based on a limited number of single images only –, Sasse gradually extends his survey with two types of projects increasingly addressing image systems, with a larger number of photographs. The *Skizzen* (sketches) series addresses the source material used for his *Tableaus*, which he exhibits from 2004 on. They are reproductions of the photographs Sasse collected, and are reproduced as such, without filters or manipulation. The depicted scenes recall very common images mostly connected to leisure – vacations, travel, noteworthy sites, architecture and family –, which are the most common types of vernacular photographs. The variety of cultural areas, places and their display

are especially echoed in Wolfgang Tillmans' *Neue Welt*[48] project shown at the Kunsthalle Zurich (2012), addressing globalized imagery, or they are reminiscent of the photo-historical canon of compounded vacation images, David Fischli and Peter Weiss' *Sichtbare Welt* shown at the *documenta X* in 1997.[49] All three projects are attempts to understand the world through its culturally and visually shaped photographic representation. In Sasse's case though, the *Skizzen* were initiated after the *Tableaus*, for which they were used as source material. But despite their initially specific use as sketches, they gradually gained importance in Sasse's strategy on image storage and circulation.

The second type of projects started in the 2000s reflects this new approach. They compound numerous photographs into databases, addressing the image through a mnemonic and referential structure underlying a shared vernacular visual culture. While the *Skizzen* already constituted the material of a database – the data without its containing structure – these projects address its very core, the processual articulation and the mathematical functions defining the relationship *between* the images. One major work series and two minor types of works reflect that particular approach, in which the digital is explicitly dealt with: the *Speicher* series (started in 2008), Sasse's website www.c42.de (1999[50]) and the "*world image archive*," an unrealized project that the photographer mentions repeatedly in the early 2000s.[51] While the *Tableaus* were chiefly an interrogation of images as symptoms of a particular visual culture, subjected to trends and historically unstable, these projects rather confront processual features of the photographic apparatus: the image as outcome of a selection process and the image as part of a database system.

Skizzen

In *The Düsseldorf School of Photography*, Stefan Gronert describes the *Tableaus* through a commonly used dialectical relationship between two media, emphasizing the often ambiguously perceived relationship of photography and painting in a digital context (e.g., imprint versus construction): while the use of the sketches in order to enlighten the work process of the *Tableaus* is clearly reminiscent of the model of

48 Wolfgang Tillmans, *Neue Welt*, Cologne, Taschen, 2012.

49 The concept had also been displayed as a twelve-hour loop video on the TV channel *Arte* during *documenta X* in 1997, but also exists as a three-channel video installation, a light box installation and a book. See for example *Peter Fischli and David Weiss. Fragen und Blumen. Eine Retrospektive*, exhibition catalogue (Kunsthaus Zurich, 2007), Zurich, JRP, 2007 and *Peter Fischli and David Weiss. Sichtbare Welten*, Cologne, Verlag der Buchhandlung Walter König, 2000.

50 According to the web history tools of www.archive.org and www.netcraft.com the website went online in 1999. The date is not mentioned on www.c42.de, however.

51 Some information about the project can be found in Jens Schröter, "Archive-post/photographic," at medienkunstnetz.de. Available at http://www.medienkunstnetz.de/themes/photo_byte/archive_post_photographic/textsummary/, accessed on June 27, 2018 (based on a conversation between Jörg Sasse and Jens Schröter in Düsseldorf on July 25, 2002). In another conversation with Suzanne Holschbach (undated, after 2005), he claims that he has lost interest in such projects, where users tag images. See "Bilder-(neu)-Ordnungen. Podiumsgespräch mit Jörg Sasse, Dieter Daniels und Susanne Holschbach" (transcript), op. cit.

painting, *Speicher* addresses digital computing technologies and the status of the image in digital communication systems.[52] The *Sketches* project however, while conceptually and etymologically referring to the painterly model, also plays an important role in Sasse's database projects. It consequently cannot be delimitated from his inquiry of visual culture through mechanical images. In an exhibition in Grenoble, which was held between November 2004 and January 2005, Sasse exhibited for the first time a selection of *Sketches* along with his *Tableaus*, suggesting the preparatory steps that underlie the series. While the *Tableaus* were displayed individually in large formats without margins, the sketches were hung in small format, framed more conventionally with a white passe-partout. In a text published in the exhibition catalogue,[53] the artist comments on the role of these sketches and the implications of their selecting process:

> *As basic material for my sketches I use amateur photos or photos I have taken myself. I then make a selection from the pictures available to me and rework them on the computer. The result is a batch of sketches, a small number of which will be used subsequently as a basis of my works. The fact that a basis relies on an original outside or one from my own output doesn't matter at all. As far as the sketches are concerned, on the other hand, the link with the original photo is more obvious, which is why a separation between the photos taken by me and those taken by other people seems to make good sense. All the sketches reproduced here are from amateur photos.*[54]

Vernacular visual culture plays a central role, which suggests why Sasse hardly ever includes images shot by himself. He seeks to investigate a generic rather than a particular approach to visual culture, and the shared criteria are of chief interest to him. Similar to painting, where sketches prefigure the final result and embody an analytical and experimental approach, the *Sketches* serve as inquisitive models.[55] They reflect Sasse's interrogation concerning the formal properties of these images. But while this relationship seems obvious theoretically or conceptually, it is hard to establish a strict correlation between both series. In the Grenoble exhibition, there are 184 *Sketches* and forty-five *Tableaus*. The catalogue only shows fifty-six sketches, four on every page, without date or title. The *Tableaus* are shown individually in larger scale. But it is hard, especially through the information given in the catalogue, to establish a specific correspondence between both series, as there seems to be no visual equivalence and not enough factual data (e.g., dates) to correlate particular images. Only a

52 Stefan Gronert, "Photograhische Emanzipation," in *Die Düsseldorfer Photoschule*, op. cit., p. 63 – 64.

53 *Jörg Sasse. Tableaux et Esquisses*, exhibition catalogue (Musée de Grenoble, 2004 – 2005), Munich, Schirmer/Mosel, 2004.

54 Ibid., p. 117.

55 In a more aesthetic approach, Guy Tosatto calls them a "breeding ground." Guy Tosatto, "Little Improvised Poems," in *Jörg Sasse. The Grenoble Block*, Munich, Schirmer/Mosel, 2006, p. 202.

subsequent editorial project, which informs readers about some of those aspects, emphasizes Sasse's growing interest for the *Sketches* and, to formulate it differently, for an increasingly important interrogation of image selection processes rather than a visual result.

Fig. 105: Jörg Sasse, *Speicher*, 2008

In 2006, two years after the exhibition and the publication of the catalogue, Sasse realizes another book on the Grenoble exhibition called *Skizzen – Der Grenoble Block*,[56] also edited by Schirmer/Mosel. The same format publication reproduces every *Sketch* of the series in full-page, gives them a title and dates the series.[57] The sketches were all made in 2004, while most *Tableaus* shown in the exhibition – which are absent in the subsequent artist book – were made between 2000 and 2004. The book further contains installation views showing the correspondence of *Sketches* and *Tableaus* in an exhibition (the catalogue only shows the reproductions of the images themselves), suggesting a shift in interest toward image series and sequences, as opposed to the more visually independent and autonomous *Tableaus*. The term "block" in the title may refer as much to the physicality of the book – it is almost twice as thick as the catalogue – as to the idea of batch, group or cluster. As such, the publication constitutes a physical outcome of Sasse's concept. It addresses dynamic relationships between images, which are – not unlike historic examples of photography books – arranged as a system. There is no particular layout suggesting narrative, linear or highlighting criteria. All images share the same status – size (except panoramic images), placement, layout are similar –, unlike Sasse's photo books of the 1990s (e.g., Fig. 78). Photographs can thus hardly be interpreted individually, and the status of the single image, in the exhibition as in the editorial context, can be questioned. The system or concept, which prefigures the idea of image database central to the forthcoming *Speicher* project, pervades.

56 *Jörg Sasse. The Grenoble Block*, Munich, Schirmer/Mosel, 2006.
57 Ibid., p. 195.

While formalizing the exhibition and the series in book form, *Der Grenoble Block* entails a supplementary character that addresses image batches. But interestingly, the *Skizzen* are not displayed on Sasse's website c42.de, suggesting that the way Sasse addresses the database implies a shift and decontextualization of medium – book or physical *Speicher*. As the saving of the images on the web would *literally* be a database, it would somehow defeat the purpose.

Database projects: "*Speicher*," "www.c42.de" and the "World Wide Web Archive"

As will be discussed more exhaustively in part 4, various visual strategies extending the reading of the discrete image to a dynamic relationship between multiple images predate Sasse's work. The re-emergence of interest for chronophotography in the 1960s in the work of Dan Graham or Sol LeWitt addresses the temporality between images, the theoretical and art historical debate on serial imagery reflects an interest in dynamics between images (e.g., John Copland's book *Serial Imagery*), Bernd and Hilla Bechers' typologies emphasize comparative mechanisms and, various atlas projects, such as Gerhard Richter's *Atlas* or Hans-Peter Feldmann's *Bilder*, envision a production of meaning or interpretation that extends the strict indexical ability or potential of still images to their perception by a specific viewer in a specific cultural and media context. Jörg Sasse's various database projects can be interpreted as the continuation of these strategies, addressing the grammar of photographic images and their reception by a specific viewer, but they extend this inquisitive approach to the technical apparatus mediating these imageries in a digital context. Image viewing and display in digital systems invariably relies on three core elements responsible for the management of the information: firstly, the database, which stores the images, secondly the classification system, which handles the organization of the stored data and finally the interface, which allows for its retrieval. On a purely technical level, these three functions control the way an image is saved or displayed on a computer, and they could thus be strictly evaluated in the context of a technological history of digital imaging systems. But as is becoming increasingly evident, these components seem to play a central role in contemporary visual culture, as a diffusion apparatus such as the web increasingly replaces traditional media and might endorse an equivalent role in the constitution of specific visual culture as did news magazines in the first half of the twentieth century or television in the second half.

Three of Jörg Sasse's projects explicitly address the concept of such database and data classification systems. The installation *Speicher*, first shown at the *Objectivités* exhibition of the Musée d'art Moderne de la ville de Paris in 2008 takes shape as a physical database, containing 512 framed *Sketches* in a metal cabinet (Fig. 106).[58] The project has had two declinations, *Speicher II* (2010) shown in

58 Subdivided into eight sections containing sixty-four images each.

Essen[59] and recently in Berlin,[60] *Speicher III* (2012) shown in Vienna[61] and *Speicher IV* (2015) shown in Bielefeld.[62] Sasse's interest in such database systems also appears in less formalized projects, however. Two other endeavors with a different status will also be addressed in parallel. What will henceforth be called the *World Wide Web Archive*, a never realized project, envisioned a web classification system in which users could have tagged and organized images found on a website themselves.[63] While it is only a concept, it can provide insight into Sasse's database strategy. His personal website c42.de finally, while offering resources such as catalogue texts or interviews of the artist, also contains most of Sasse's images in a cross-referenced database, accessible through generic (e.g., colors) or specific categories (e.g., content of images, places of exhibitions of particular works).[64] As such it reflects processes at work in the two previous projects, while strictly speaking just being a communication or self-advertising tool.[65] Sasse's core interrogation, as established earlier, is primarily visual.

But his works nevertheless rely on a syntactical categorization, as much in the way the images are stored or displayed as in their process of perception, in which a viewer – often unconsciously – labels the images he acknowledges with words. In order to understand this assigning mechanism, we shall at first explore it in the elaboration of the works, before evaluating its impact on a viewing subject. The labeling with categorical nametags, central in all three works, can be traced back to Bernd and Hilla Becher's typologies. The systematic depiction of industrial architecture is shaped by a certain amount of categories, types, subtypes and work groups, based on both the "functional and structural" and the "aesthetic appearance" of the depicted structures.[66] Their entire work corpus – as much in its inscription in the history of industrial architecture as in the history of conceptual artistic practices – is thus categorized with tags such as winding towers, silos, blast furnaces or water towers and assembled in typologies of images (9, 12, 15, etc.), according to both criteria. Very pragmatically, the numerous series combine various types from various periods or geographical areas, categorizing them by form and function, rather than context or dating. A similar system of categorization,

59 Exhibition *Ruhrblicke*, Zeche Zollverein, Sanaa Building, Essen, 2010.

60 Exhibition *Jörg Sasse. Common Places*, C/O, Berlin, 2012.

61 *Speicher III* is a small wall-mounted sixty-four image version exhibited for the first time in the gallery Nächst St. Stephan in Vienna in 2012. See *Jörg Sasse. Durchsicht*, press release, Gallery Nächst St. Stephan, February 2012.

62 Exhibition *Serendipity. Vom Glück des Findens*, Kunsthalle Bielefeld, 2015.

63 Jens Schröter, "Archive-post/photographic," op. cit.

64 Sasse's photographs can also be classified by exhibition. It is possible to know in which venue a single image has been shown or to make a list of all the displayed works of a specific show, which makes the website a very valuable tool for art historians. Currently 86 out of 141 listed exhibitions are connected to the image database.

65 Sasse's historiography has sometimes acknowledged the site as a part of his work, but this particular stance is rather uncommon. See for example entry "Jörg Sasse. Computer manipulierte Bilder," in medienkunstnetz.de. Availlable at http://www.medienkunstnetz.de/works/computer-manipulierte-bilder/, accessed on August 8, 2018.

66 Susanne Lange, "Chapter 9: Typologies and Comparative Juxtapositions" and "Chapter 10: Work Groups and Families of Objects," in Susanne Lange, *Bernd and Hilla Becher. Life and Work*, Cambridge (MA) and London, The MIT Press, 2007 (2005).

based on the represented object or the visual output, can be found in all three database projects but is already present in another book project, *Jörg Sasse – d8207*. In the publication[67] created for the 2007 exhibition at the Museum Kunst Palast in Düsseldorf, Sasse had already grouped sets of *Skizzen* by categories (in this case geographical), also using the term "block." The categories range from "Düsseldorf – Block 1" to "Düsseldorf – Block IV." Here again, bookwork can be considered a preliminary step preceding the database projects.[68]

Fig. 106: Jörg Sasse, *Speicher* (2008), individual images with codes.

Speicher (2008) and *Speicher II* (2010) contain fifty-six categories[69] that are associated to specific images, each tagged by a discrete alphanumerical code (see Fig. 106). The project etymologically addresses the idea of a database – its title in German refers as much to the idea of digital memory as to the generic word it stems from, meaning *storage* (a *Speicher* can for example be a water reservoir, a granary or an attic) –, but it also creates a visual output, based on an image categorization system. In Essen, these categories were even exhibited as such, as small paper tags next to the cabinet. They are responsible for the localization and the management of the images contained in the shelves, and thus function as a criterion for their storage and their handling in the exhibition. The installation generates sequences of photographs that are to be displayed next to each other on a horizontal axis on the walls of the exhibition space and changed regularly. Theoretically all combinations are possible, but Sasse suggests series, which are better matched than others, using a grade scale ranging

67 *Jörg Sasse. d8207*, exhibition catalogue (Museum Kunst Palast, Düsseldorf, 2007), Cologne, Verlag der Buchhandlung Walter König, 2007.

68 Sasse's books can further be inscribed in the image autonomization process in the Bechers' typologies and Ed Ruscha's bookwork, as analyzed by Martina Dobbe. See Martina Dobbe, "Typologie und Bookwork. Bildkonzepte des Seriellen bei Bechers und Ruscha," *Frame #2*, op. cit.

69 *Speicher III* does not rely on categories anymore. The images are chosen randomly. See *Jörg Sasse. Durchsicht*, press release, op. cit.

from 1 to 5, guiding the spectator. The idea of classification makes explicit one of the key ideas of the project: the fact that some images are a better match than others, which is a part of Sasse's empirical investigation of visual culture through a visual output but also through the expression of the apparatus, the database.

Fig. 107: Jörg Sasse, *Speicher III (Vienna)*, 2012, example of generated image sequence (individually ca. 22 × 30 cm)

Digital technologies – as much in their technical as in their structural expression – are central to the concept. The architecture of the cabinet, containing 512 photographs in eight sections of sixty-four images each, echoes the binary nature of digital computing mechanisms. The bit, based on the binary opposition of a true (1) and false (0) value, reflects the fundamental mathematical, conceptual and technical element of every digital system that all memories are based upon. Its number 2 base (the value is either true or false) is reflected in every quantification of a memory: 8 corresponds to 23, 64 corresponds to 26, 512 corresponds to 29 and so forth.[70] The title of the work and its architecture based on digits connected to the computation and memory mechanisms thus metaphorically and structurally addresses the digital storing and imaging systems.

Categorization, production of image sequences and perception by a viewer constitute a central articulation of Sasse's work. But clearly his position also bears a component, addressing and interrogating images in a broader context. This aspect thus collides with contemporary interrogations of Thomas Ruff or Andreas Gursky. One key aspect of the database projects lies in the emphasis on the image itself, with its "autonomous reality,"[71] independent from what is actually depicted, with focus shifting toward the economy of photographs in a digital context. The object of examination and documentation is a visual vector and the way its content is visualized and perceived, not a represented, pre-existing "reality." Interestingly, Jörg Sasse uses digitally altered, found vernacular imagery, which he incorporates in a physical installation to address the economy of digital images, making explicit and visible a process constantly enacted by users of computers or smartphones. These processes have become self-evident, and their infrastructure is thus logically overseen, much as the specific grammar of vernacular imagery reflected upon in the *Skizzen* is ignored in real time, only to be acknowledged as "from another era" once it becomes

70 Similarly, a 1 gigabyte (Gb) computer hard drive is in fact built upon 1024 (2^{10}) megabytes (Mb).

71 Stephan Berg, "La réalité autonome de l'image," in Maria Müller, Armin Zweite and Fabrice Hergott (ed.), *Objectivités. La photographie à Düsseldorf*, op. cit.

old-fashioned. Through the visualization of the process of a database and the explanation of its functioning through categorization, Sasse makes tangible and visible something too abstract to grasp.

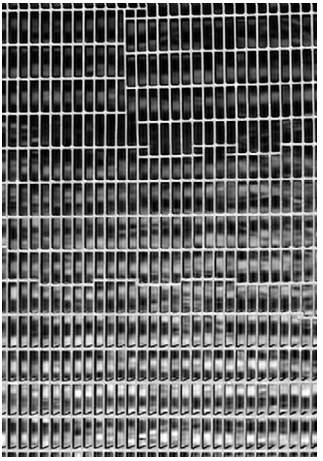

Fig. 108: Jörg Sasse, *5367*, 2008 (185 × 130 cm)

Systems, grids and picture-reality

In the 2000s, the role of digital image composition or retouching in Sasse's work remains similar to the role these processes played in his work in the 1990s. While the ten to twelve annually created *Tableaus* are likely to be processed digitally (scan, color corrections, cropping, filters, etc.), only a small percentage of those produced in the last decade *appear* digitally retouched.[72] An exhaustive study has yet to be conducted to establish the work process of the 180 existing *Tableaus*. While digital composites are central to Gursky's work, Sasse rather relies, through the *Speicher* and the *Skizzen* series, on comparative mechanisms. The approach is conceptual and self-reflexive. However, one formal feature, present already in the 1980s and particularly apparent in the *Tableaus*, interestingly compares with Gursky's work: the existence of orthogonal grid structures (See Fig. 108). Numerous *Tableaus* are based literally on grids[73] or construct visual spaces with arranged, intertwined or crossed elements reminiscent of grid structures, shifting the focus to the picture plane. As Rosalind Krauss argues,

72 Stefan Gronert mentions that in 2004 and 2005 only one digitally retouched photograph has been produced annually. Sasse's website used to display the category "digitally manipulated" [computer manipuliert], a tag which has now been removed from the site and reveals the limitations of digital sources. See Stefan Gronert, "Ohne Worte," in *Jörg Sasse. Tableaus und Skizzen 2004/2005*, exhibition catalogue (Kunstmuseum Bonn and Kunstverein Hannover, 2005 – 2006), Munich, Schirmer/Mosel, 2005, p. 61. Jens Schröter also point to Sasse's website, stating that he creates a yearly average of "maybe ten to twelve [Tableaus]." See Jens Schröter, "Das ur-intermediale Netzwerk und die (Neu-) Erfindung des Mediums im (digitalen) Modernismus. Ein Versuch," in Joachim Paech and Jens Schröter (ed.), *Intermedialität. Analog/digital: Theorien, Methoden, Analysen*, Munich, Fink Verlag, 2008, p. 596, footnote 78.

73 Reminiscent of Sol LeWitt's *Photogrids*, published in 1978.

"unlike perspective, the grid does not map the space of a room or a landscape or a group of figures onto the surface of a painting. Indeed, if it maps anything, it maps the surface [...] itself."[74] Similarly as in Thomas Struth's *Paradise* series, even vegetal or more generally organic elements are adjusted on underlying grid structures, organizing the image into an orthogonal place surface (e.g., *2268*, Fig. 109).

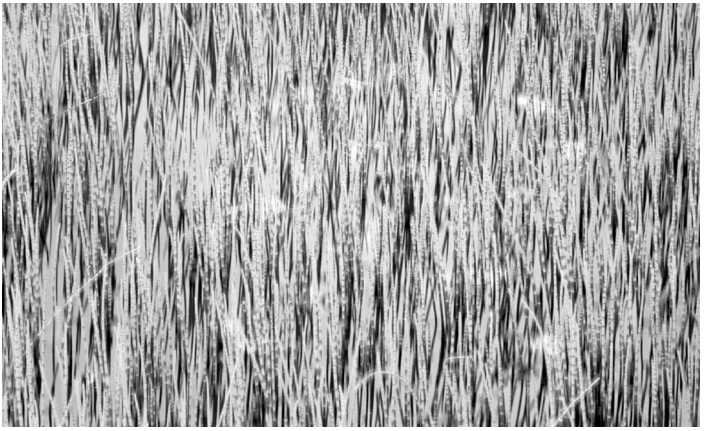

Fig. 109: Jörg Sasse, *2268*, 2001 (122 × 200 cm)

A specific trait of Sasse's vegetal images is the fact that they tend to be more retouched and clearly appear digital. The merger of the two-dimensional picture plane and the depicted reality seems to be easily achieved if grids or architectural structures are depicted. *5367* (Fig. 108) and *5440* do not appear to be retouched, except the probable cropping. Vegetal images such as *6478* (2000), *2268* (2001, Fig. 109) or *5302* (2010) on the other hand are artificially embedded into such structures, as if they were unable to match the grid, an impossibility that Struth's *Paradise* series, with its pristine constructions specific to architectural photography, clearly undermines (Fig. 110) Although all picture elements are vegetal, the image construction endorses a strict orthogonal point of view, which merges the various layers into a two-dimensional surface, organizing the organic components.

74 In this quote Krauss specifically addresses painting, but the concept can be extended to photography. See Rosalind Krauss, "Grids," *October*, Vol. 9, Summer 1979, p. 52. This particular quote has been used by Jens Schröter, who firstly associated Krauss' framework and Sasse's photographs. See Jens Schröter, "Das ur-intermediale Netzwerk und die (Neu-) Erfindung des Mediums im (digitalen) Modernismus. Ein Versuch," op. cit., p. 597 – 599.

Fig. 110: Thomas Struth, *Paradise 9 – Xi Shuang Banna, China*, 1999 (270 × 340 cm)

Sasse's photographic two-dimensional constructions are commonly interpreted as an outcome of painterly processes conversing with photography.[75] While Struth's images retain to a certain degree a relationship with the depicted jungle, Sasse overtly redeems and rejects the indexical bond, to draw attention to the image surface even more explicitly, exemplifying "the autonomy of the photographic image and its visual self-logic."[76] The specific retouching filter applied to *5302*, for example (see Fig. 112), feigns a painterly effect. It highlights forms and shapes and simulates a three-dimensional depth by adding a shadow – the dark green on the right of the poppy flower –, and a bevel and emboss effect.[77] The original three-dimensional plant is levelled off to a two-dimensional image, and in a second step the 2D color shape is extruded as a simulated 3D form. While the effect might be painterly, its implication for the photographic apparatus reveals a self-reflexive strategy, which highlights the imbrication of image and depiction, rejecting indexicality as a defining parameter. Similar to the pixelated structure of Thomas Ruff's *jpegs* or Gursky's anamorphic *Rhein II* picture (even though it's invisible in that case[78]), the facture of these overtly retouched *Tableaus* inscribes the series in another visual regime, in which the focus is not a connection with "reality," but a relationship with images.[79]

75 See for example Stefan Gronert in *The Düsseldorf School of Photography*, op. cit., or Stephan Berg in "Die Autorität der Bildoberfläche," in *Jörg Sasse. Tableaus und Skizzen 2004/2005*, op. cit.

76 Stephan Berg in "Die Autorität der Bildoberfläche," in *Jörg Sasse. Tableaus und Skizzen 2004/2005*, op. cit., p. 8.

77 A common Photoshop filter.

78 If not numerous, there are a few examples of photographs of Gursky, which clearly give away their composite nature, the most overt being probably *Stockholder Meeting* (2001) or the *Cocoon* series (2007 – 2008).

79 While common in the work of Thomas Ruff and Jörg Sasse, the picture surface is only rarely made visible in the work of fellow photographers from Düsseldorf. Elger Esser's photographs of old postcards in his series on French seascapes (e.g., *39. Fécamp*, 2007 or *Biarritz*, 2005) for example reveal the materiality of the source-image, but such a strategy is virtually nonexistent in the work of Andreas Gursky, Candida Höfer, Thomas Struth, Axel Hütte, Simone Nieweg or Laurenz Breges.

Fig. 111: Jörg Sasse, *5302*, 2010 (50 × 75 cm)

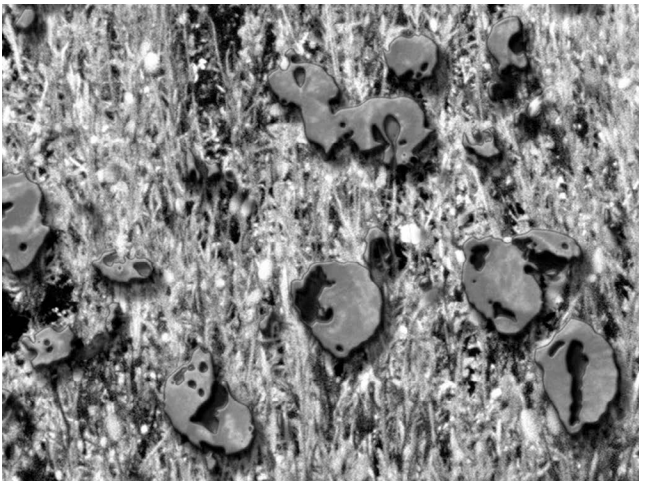

Fig. 112: Jörg Sasse, *5302*, 2010 (50 × 75 cm) detail

Sasse uses various strategies to apostrophize the viewer and make explicit this particular intent. Several images of the series contain optical errors or aberrations – out of focus snapshots, noise, lens flare or what might be a finger on the lens (see Fig. 113) –, which undoubtedly tag the photographs as images. But while these errors are clearly present in numerous source images and thus potentially reflect the amateur practice of photography, Sasse also adds these effects digitally. All these common parameters of the photographic apparatus considered errors exist in common retouching software,[80] which allows Sasse to simulate technical limitations and usual mistakes.

80 Adobe Photoshop CS6 for example contains over ten different blur filters (Gaussian blur, motion blur, radial blur, etc.).

Jörg Sasse's use of digital technologies throughout the 2000s marks a shift from his investigation of the grammar of the photographic image, to a more conceptual examination of the economy of the image – analyzed, labeled, categorized, stored and re-distributed. While emphasizing the fact that the processed objects are primarily images, investigating the relationship between them or their connection with the visual culture of the viewer, Sasse interestingly confronts bookwork, installations of images in exhibitions and database projects, reconstructing the genealogy of the image in contemporary culture through its circulation systems. If the physical *Speicher* further addresses the computational mechanisms of digital systems, with Sasse even interpreting his grids as metaphors of global networks,[81] his project clearly extends beyond strictly digital media.

Fig. 113: Jörg Sasse, *6736*, 2012 (108 × 160 cm)

Lost Memories,[82] a recent series started in 2009, addresses found images altered through water, microbes or mold (Fig. 114). [83] Some images are completely abstract, while in others the photographic origin can be traced. Although the visible process seems to be strictly natural, reflecting an increasingly important tendency in photography to replace digital technologies by chemical processes to create

81 In "Ein paar Zeilen zu Netzwerken" (2009), Sasse addresses the automated exchange of data on the web and the political and economical importance of networks. See Jörg Sasse, "Ein paar Zeilen zu Netzwerken," on c42.de, 2009. Available at http://www.c42.de/text.php?tid=1, accessed on June 27, 2018.

82 Initially shown at the Gallery Wilma Tolksdorf, Frankfurt am Main, in the exhibition *Tableaus and Lost Memories* (September 3, 2011-November 20, 2010).

83 See for example Andreas Kreul, "Arbeiten am Bild (Wiederbetrachtungen)," at http://www.dzbank-kunstsammlung.de, 2013. Available at http://www.dzbank-kunstsammlung.de/de/artfoyer-detail/joerg-sasse-arbeiten-am-bild/info/#/info, accessed on June 27, 2018 and Anna Motz, "Fotografie im Fokus. Techniken der Fotografie," at *StädelBlog*, July 16, 2012. Available at http://blog.staedelmuseum.de/verschiedenes/fotografie-im-fokus-techniken-der-fotografie-teil-110, accessed on June 27, 2018.

abstract images,[84] Sasse's series has been scanned and digitally edited.[85] Enhancing the materiality of the original prints (by working with sharpness and blur effects or enhancing the vividness of the prints),[86] he technically combines "two" technologies in an overall comment on the construction of knowledge – or memory – through the photographic medium, in all its manifestations. As Kai Uwe Hemken argues, "digital photography and in the end the technology of the digital merely intensified the problematic situation of representation of the medium; they did not create it. Thus the digital in general and with it digital photography is only one episode in the long history of the media, which has from the beginning raised the fundamental question of reality, representation, and perception."[87]

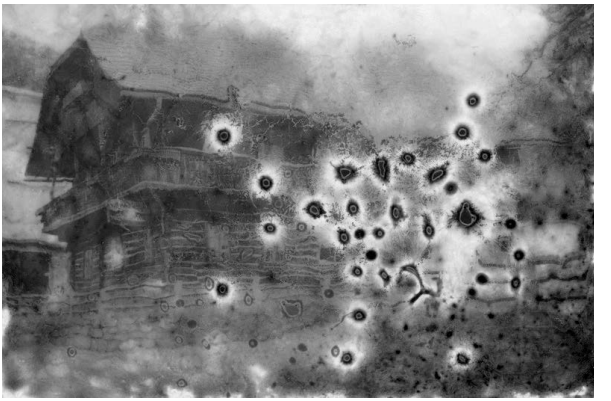

Fig. 114: Jörg Sasse, *LM-11–07*, 2011 (60 × 90 cm)

2 MEDIA, PORNOGRAPHY AND THE VIEWER EXPERIENCE: THOMAS RUFF'S JPEGS

Throughout the 1990s, Thomas Ruff's digital practice, on a technical level, chiefly relies on image retouching. The *Plakate* or the *l.m.v.d.r.* series, but also the more recent *Maschinen* (2003), resort to image composition or retouching tools to construct or edit images, using either photographs taken by Ruff or found archive material. The confrontation with the digital is at that time rather factual, similar to the

84 As for example in Raphael Hefti's series, which uses lycopodium spores to create abstract photograms. See for example Claus Gunti, "Post-, para- et champs élargis. Quelques réflexions sur les catégories alternatives à la photographie et au cinéma," *Décadrages. Cinéma, à travers champ*, No. 21–22 ("Cinéma élargi"), Winter 2012.

85 Andreas Kreul, "Arbeiten am Bild (Wiederbetrachtungen)," op. cit.

86 Ibid.

87 Kai Uwe Hemken, "Von Suchmaschinen und Normalismen. Anerkennungen zur digitalen Photographie bei Andreas Gursky und Thomas Ruff," in Monika Steinhauser and Ludger Derenthal (ed.), *Ansicht, Aussicht, Einsicht. Andreas Gursky, Candida Höfer, Axel Hütte, Thomas Ruff, Thomas Struth: Architekturphotographie*, op. cit., p. 38, quoted in Caroline Flosdorff, "Time Machines. Concepts of Reality in Thomas Ruff's Cycle Machines," in Caroline Flossdorf and Veit Görner (ed.), *Thomas Ruff. machines = Machinen*, Ostfildern, Hatje Cantz, 2003, p. 14.

retouching of the *Häuser*. Ruff mentions for example that for the *Plakate* he used computer retouching tools for strictly technical reasons: "Initially I thought that digital photography was just a new tool, as a new lens or a new film [...] At that time it was the easiest way to do photomontages."[88] In the *I.m.v.d.r.* series he retouches the images of Mies van der Rohe buildings in order to distance himself from the iconic photographs, which have constructed the legacy of the famous architect and creates an individual aesthetic approach. In the *Maschinen* series he has retouched found images of industrial machines through coloring – similar to the *Retuschen*, which were colorized manually – and sometimes added some elements or enhanced a texture or surface, in order to free the object from the context.[89] If his interest lies also in their visual history, digital interventions are in these series rather pragmatic and reflect his uninhibited use of these tools. The end of the decade, however, marks new strategies, which endorse a much more far-reaching approach of the digital.

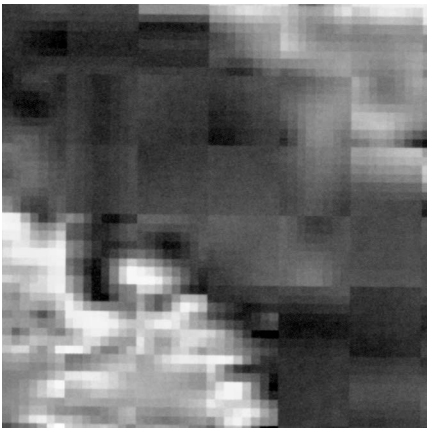

Fig. 115: Thomas Ruff, visible pixilation, detail (approx. 35 × 35 cm) of *jpeg pk01*, 2004 (244 × 188 cm)

Formal and categorial constructions in the "*nudes*"

In 1998, Ruff starts to focus on a nude photography series, while working in parallel on abstract, generated and pixelated images.[90] According to his own account, he becomes interested in the visual structure of these low-resolution images, while conducting research on pornographic websites for the series.[91] But he is also captivated by the particular visual economy and circulation of such photographs after witnessing "the rate of voyeurism and exhibitionism present on the

88 Interview of Thomas Ruff by Gabriele Naia, "Thomas beyond the Surface," at www.italy.exhibart.com, op. cit.

89 See Caroline Flosdorff, "Time Machines. Concepts of Reality in Thomas Ruff's Cycle Machines," in Caroline Flossdorf and Veit Görner (ed.), *Thomas Ruff. machines = Machinen*, Ostfildern, Hatje Cantz, 2003.

90 Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 236.

91 Interview of Thomas Ruff by Gabriele Naia, "Thomas beyond the Surface," at www.italy.exhibart.com, op. cit.

Internet, where the husband takes pictures of his naked wife and shows her to the world through a site."[92] Ruff thus starts processing those images to create his own photographs, addressing the entanglement of this particular visual economy with its technological preconditions. Usually compressed at 72 dpi, in order to achieve better download speeds, the jpeg is the most commonly used format on the web. Technically, it represents the best possible consensus between quality and usability. In terms of resolution, the compressed images remain readable if displayed in small sizes, embedded in a website, but in the late 1990s, their pixelated structure rapidly appears when enlarged or zoomed into. Ruff explains his interest in that particular series with the visual impact of that particular technical contingency, an unplanned parameter "that has nothing to do with aesthetics," a "collateral phenomenon"[93] that has considerably shaped the relationship to images in the digital age.

Fig. 116: Thomas Ruff, *blurred pixilation*, detail (approx. 35 × 35 cm) of *nudes obe06*, 2001

In the *nudes* series (1999 – 2004[94] and 2011) and later in the *jpegs* series based on iconic pictures found on the web (mostly from 2004 – 2007), Ruff also uses digital editing techniques. The main technical operation consists of interventions such as the application of blur or softening filters that make the pixel structure more or less distinct. In the forthcoming jpeg series, the double pixel structure is left visible and enhanced by the size of the formats (see Fig. 115). In that series, they constitute a core visual element. The pixels in the *nudes* on the other hand are blurred to such an extent that no line or grid is visible, but only the effect on color patterns (see Fig. 116). The discrete pixels structure is blended into blurred areas, and the pixel structure is not as such visible, but "ethereally" pierces through. The effect of compression algorithms remains visible through the mathematical

92 Ibid.

93 Interview of Thomas Ruff by Max Dax, *Spex. Magazin für Popkultur*, No. 316, Sept-Oct. 2008, reproduced in Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 72.

94 See *Thomas Ruff. Nudes*, texts by Michel Houellbecq, Munich, Schirmer/Mosel, 2003.

color distribution. Every pixel originally contains only one plain hue. Even though the image is edited with softening filters, its prior decomposition into geometrical forms of same colored pixels and consequent color reduction remains apparent. Effects of jpeg algorithms thus remain visible, even if the pixels themselves are erased.

Fig. 117: Thomas Ruff, *nudes ap14*, 2001 (112 × 165 cm)

A parameter that consequently plays an important role in the *nudes* series is the size of the prints, a paramount factor of its perception. The images are printed and displayed in large formats (height and width vary from 80 to 150 cm), similar to the *Porträts* series. The enlargement process transposes the (attenuated) pixel grid, commonly apprehended on a small computer screen, into real space. The process produces a double perceptive movement implicating the viewer, oscillating between an image that can be seen in its totality – when seen from afar – and an image that exposes its blurry structure while hiding its content. From a position in front of the photographs, it is difficult to recompose a mental image from the indistinct surface. But while the same effect shows the pixel structure in the *jpegs*, the blurry treatment here rather produces a tendency to romanticize and somehow disarm the rough visual content. The *nudes*, independently from their potentially "seductive" content – while being images *on* pornography, they remain sexually explicit images –, are aesthetically appealing. Digital operations, such as the occasional removal of disturbing elements, alteration of chromatic scope[95] or reframing, clearly produce images with an aesthetic character, even though such a position is never clearly endorsed by Ruff, or even rejected.[96] In interviews he rather emphasizes the importance of structural elements in the *nudes* (jpeg format, pixel, compression algorithms, etc.) but avoids the discussion about aesthetic features (manipulated colors,

95 See Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 236.
96 Helga Meister, "Das Bild ist schön," *K-West*, op. cit.

etc.). In an interview with Helga Meister, for example, he mentions that these manipulations are made "in order to create a slight artificiality,"[97] directing the focus to the media itself, rather than to its aesthetic traits.

Fig. 118: Thomas Ruff, *nudes obe06*, 2001 (92 × 116 cm)

Sheer retouching and digital appearance are only two of the elements that address the digital. The use of images found on the Internet and the role of categories in the image selection process reflected in the titles embody another level of confrontation with these technologies and address more conceptual concerns. Ruff produces the cartography of the specific visual culture of the Internet and the circulation of such images. The blown-up pornographic material, for instance, answers to a categorial organization addressing various sexual practices and reflects the taxonomy used on the original websites to advertise them. In his appropriative process, Ruff explicitly broadens the scope of his survey to all kinds of sexual preferences or fantasies. He thus avoids a too conventional categorization, such as a heterosexual observer showing naked women, or art historically connoted classification only showing female *nudes*. In an interview with Hans Ulrich Obrist, Thomas Ruff recalls that the first nude pictures he stumbled upon on the Internet were fashion photographs of Helmut Newton or Peter Lindbergh, which he discarded as they seemed "too much like a nineteenth-century male heterosexual view of the female body."[98] Ruff consequently adopts another categorial system, reflecting both the consumer of these images and their producer: the series reflects the tags used by the pornographic industry, encompassing categories such as group, fetish, bondage, gay, blonde or lesbian. While the images correspond to these largely accepted categories, he uses generic personal tags in the titles. The *nude obeXX* series

97 "Um eine leichte Künstlichkeit zu erzeugen," ibid.

98 See "Thomas Ruff in Conversation with Hans Ulrich Obrist," in *Thomas Ruff*, London, Gagosian Gallery, 2012, p. 5 and 6.

– *nudes obe01*, *nudes obe02*, *nudes obe03*, *nudes oba04*, *nudes obe06* (Fig. 118), *nudes obe07*, *nudes obe08* –, all contain sadomasochistic or bondage scenes, which suggests that the prefix "obe" stands for obedience, servility and domination being the two fundamental behavioral patterns defining these particular sexual practices. In other series made in the same period, Ruff has used acronyms such as *l.m.v.d.r.* for Ludwig Mies van der Rohe or *d.p.b.* for "*deutsches Pavillon Barcelona*," but in the *nudes* series he doesn't use the dots between the letters, which indicates that the categories are rather short forms or prefixes rather than acronyms. *Nudes pant11* (1999) shows a close-up of panties, which suggests a connection, but many particles used in the titles are hard to establish; "dyk" could suggest "dyke" – a pejorative appellation for lesbians – but since *nudes dyk* shows a man and a woman, the supposition isn't conclusive. Another category such as *nudes asd 04* (2001) couldn't possibly be a short form, as there are no words beginning with "asd" in German or English. Similar to the blur filters, which conceal the compression algorithm while leaving its traces apparent, Ruff's title methodologies prohibit a too literal relationality. The used acronyms or prefixes further suggest an unfinished state of the photographs, as such forms are reminiscent rather of an automated file naming system – the native names of photographs produced by a digital camera often use acronyms and number (e.g., dsc0001, dsc002, etc.), defined by a set of rules[99] – than of *conventional* titles of artworks. Ruff addresses the workflow and image circulation, the architecture of digital imaging systems, and the processes it is defined by, rather than the autonomous tableau in an artistic context.

Comparable to Jörg Sasse's database projects, image categorization and articulation plays an increasingly important role in Ruff's strategy. Especially on the Internet, images are necessarily defined by a linguistic classification that defines their circulation and perception. If today photographs can be found using visual parameters such as color, resemblance or anthropometric data – visible information contained *in* the images –, the most common processes rely on invisible linguistic categories, which are stored *within* (e.g., meta-tags)[100] or *beside* an image (e.g., captions).[101] Ruff's project addresses as much the medium through which the image is made accessible on the web – the jpeg image format –, as the storage and categorization system, which allows the user to access it. Much as Sasse's *Speicher*, the *nudes* reflect the core functions of digital imaging: the (compressed) image

99 The file naming and storing method of digital cameras for example are defined by an industry standard called Design rule for Camera File system (DCF), a specification of the Japan Electronics and Information Technology Industries Association (JEITA). It sets the directory structure, the file naming system or the metadata formats. See for example https://www.jeita.or.jp/english/standard/html/1_4.html, accessed on August 13, 2018.

100 A meta-tag is based on information, which is stored inside the digital image file. The most common meta-tags are those written directly to the image file by the camera, called EXIF data (e.g., geo-tags, camera model, date, aperture, exposure time, lens, etc.), but an image file can also be associated with any generic (e.g., house, portrait, dog, etc.) or specific (e.g., Brasilia, Oscar Niemeyer, etc.) tag.

101 Images on the Internet can further be connected with similar tags, which are hidden in the HTML code in which they are embedded.

itself, the database that stores the images, and the classification system that handles the organization of the stored data. While laid out less conceptually than Sasse's project, the *nudes* clearly constitute a response to an expanded understanding of digital technologies in which the image itself is not necessarily emphasized, but its inscription into an image circulation system. In Foucaldian thought this architecture encompassing image, circulation and perception has always existed – in an epistemological rather than in a sheer technical perspective –, but digital networks have made them visible and more susceptible to theoretical articulation. But before further pursuing the epistemological implications of Ruff's appropriative methods with the *jpegs*, some aspects of the *nudes* ought to be discussed, as some contextual aspects are important for their reading.

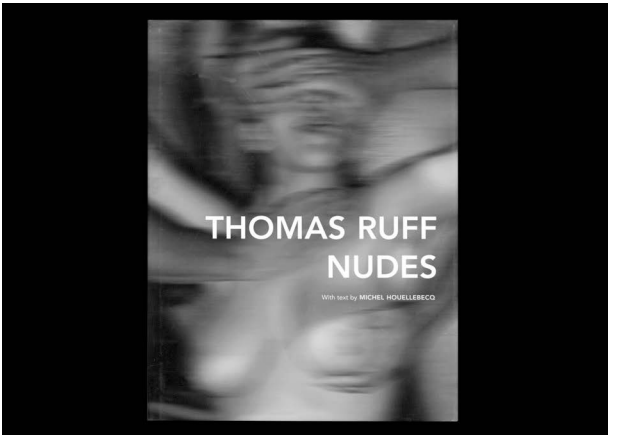

Fig. 119: Cover of *Thomas Ruff. Nudes*, New York, Harry N. Abrams, 1999

Gender and the "*nudes*"

Ruff's categorial strategy is somehow undermined by the art market and numerous editorial projects, as the most visible and most expensive nudes are mostly naked women, often alone in a color photograph, in erotic (e.g., Fig. 117) rather than pornographic (e.g., Fig. 118) poses. The catalogue of the series, prefaced by French writer Michel Houellebecq,[102] shows a clearly suggestive image (Fig. 119) – the torso of a naked woman with several pairs of hands touching and restraining her – but remains non-explicit and eventually less offensive, blurring the ambiguity between "pornography," "erotic photography" and "nude art photography."[103] But Thomas Ruff adopted this stance himself in the 2011 *nudes* series, which doesn't respect the categorical

102 *Thomas Ruff. Nudes*, op. cit. Houellebecq is famous for several novels, *The Elementary Particles* (1998) and *Platform* (2001) in particular, centered on libertinism in various forms. Both books are incidentally contemporary to Ruff's early research and production of the *nudes*.

103 See Valeria Liebermann, "'*nudes*.' The Art of Pornography," *Eikon. Internationale Zeitschrift für Photographie und Medienkunst*, No. 32, Vienna, June 2000. Reproduced in Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 228.

pattern of the previous series. The series only depicts women, mostly alone, without any explicit sexual or pornographic qualities.[104] The five images displayed at the Gagosian Gallery in London in early 2012[105] only show solitary female nudes without any explicit attributes, like the six displayed on the website of the Mai 36 Gallery in Zurich[106] or the two images for sale at the Gallery Rüdiger Schöttle in Munich.[107] The fact that only attractive young women are represented and that the most explicitly pornographic image shows oral intercourse between two nurses, suggests that the series addresses the most conventional male heterosexual fantasies only.[108] This position might on one hand be interpreted as an interrogation of the dominant paradigm in popular culture and advertising – the female nude as object of desire and as sales argument. The only image with two characters – the two nurses – could then be seen as a way of emphasizing the fact that representations of women are ruled by masculine heterosexual fantasies and gaze. On the other hand, the ambiguous position of these more conventional representations of the nude – Ruff does in fact only depict young and sexually attractive women in erotic poses in a hidden (although suggested) pornographic context –, might also suggest that the series responds to personal preferences or art market demands, an uncertainty neutralized in the early series by the confrontation of various categories and fantasies. For the series exhibited in the Gagosian Gallery in London, the very large formats of up to 260 centimeters in height (much bigger than the older *nudes* or the multiple edition 2011 *nudes*) and the rarely adopted single-print edition might further point at a marketing strategy. The focus on historical images of female *nudes* in the recent *Photograms* (2014) series rather points at a personal interest.[109]

Historical "*nudes*"

A conceptual model for the nudes can interestingly be found in the pre-history of digital imaging systems. In 1968, the artist-engineers Ken Knowlton and Leon Harmon showed a photomosaic of dancer and choreographer Deborah Hay, transformed through binary ASCII

104 As the new series has just started many of them are still held by galleries and for sale, having never been exhibited.

105 See catalogue of the exhibition *Thomas Ruff*, essay by Geoff Dyer and interview with Thomas Ruff and Hans Ulrich Obrist, London, Gagosian Gallery, 2012. The *nudes* were exhibited in London at the Gagosian Gallery at Davies Street, while the *ma.r.s.* pictures were shown at the same time at its location at Britannia Street.

106 Available at http://www.mai36.com/thomas-ruff-selected-works/18-artists/thomas-ruff/415-thomas-ruff-works-nudes, accessed on April 4, 2013 (selection now offline).

107 Available on artnet.com at http://www.artnet.com/artists/thomas-ruff/artworks-for-sale, accessed on April 4, 2013 (selection now offline).

108 An aspect reflected in the critical reception, as Geoff Dyer for example wrote in *The Guardian* that "porn can be all things to all *men*" (my emphasis), chiefly basing his argumentation on male teenagers. In Geoff Dyer, "Porn and the Shadow Side of Paradise. Thomas Ruff's Nudes," Friday March 2, 2012. Available at http://www.guardian.co.uk/artanddesign/2012/mar/02/porn-shadow-side-paradise-thomas-ruff, accessed on June 27, 2018.

109 On the history of the female nude in the history of representations see for example Lydia Nead, "The Female Nude. Pornography, Art, and Sexuality," *Signs*, Vol. 15, No. 2, Winter, 1990.

code,[110] in an exhibition focusing on "how artists of this century have looked upon and interpreted machines,"[111] titled *The Machine as Seen at the End of the Mechanical Age* (Fig. 120).[112] The show took place at the MoMA in New York and was curated by Pontus Hultén. One of the most famous of these ASCII images, was printed in the *New York Times* on October 11, 1967. Twenty-five years later, Thomas Ruff realizes very similar images based on the jpeg algorithm (Fig. 121), conceptually not very different from the binary code with which Knowlton and Harmon transformed a scanned photograph.[113] Both processes digitally translate an image of a naked woman – a consistently stable subject in the genealogy of digital imaging systems[114] – into mathematically defined discrete picture elements relying on an orthogonal grid pattern. Although the first one emerges through the fascination of suddenly available technologies and the collaboration between an artist and an engineer, and the second one from a critical interrogation of the status of image circulation systems in the late twentieth century, both derive from technical contingencies. In the introduction of this research, we stressed that "technology is always a concomitant or subordinate part of other forces,"[115] which ultimately constitute the object of this research, although only addressed indirectly. Both Ruff and Knowlton arise from an epistemological context whose formalization is expressed by the shifting relationship to images. Clearly, these forces constitute a common ground that the work of Knowlton and Ruff are symptoms of, addressing radical transformations in the way images are produced and perceived.

110 The "American Standard Code for Information Interchange (ASCII)" is a codification system, which translates numbers, the alphabet and typographical signs into binary form, in order to display it on a computer screen.

111 MoMA press release No. 123, *The Machine as Seen at the End of Mechanical Age,* November 27, 1968, p. 1.

112 Pontus Hultén, *The Machine as Seen at the End of Mechanical Age,* exhibition catalogue, New York, Museum of Modern Art, 1968. The image has also been discussed by Gene Youngblood to illustrate his chapter "Computer Films." See Gene Youngblood, *Expanded Cinema*, New York, P. Dutton and Co. Inc., 1970, p. 201.

113 See Ken Knowlton, "The Portrait of the Artist as a Young Scientist," *YLEM Journal*, Vol. 25, No. 2, January/February 2005.

114 One of the first image ever displayed on a computer screen was a pin-up taken from *Esquire*, which was shown on a billion dollar IBM Sage computer in 1956, an aerial surveillance system primarily targeting Soviet bombers. See for example Benj Edwards, "The Never-Before-Told Story of the World's First Computer Art (It's a Sexy Dame)," *The Atlantic*, n.d., 2013. Available at http://www.theatlantic.com/technology/archive/2013/01/the-never-before-told-story-of-the-worlds-first-computer-art-its-a-sexy-dame/267439/, accessed on June 27, 2018.

115 Jonathan Crary, *Techniques of the Observer. On Vision and Modernity in the Nineteenth Century*, op. cit., p. 8.

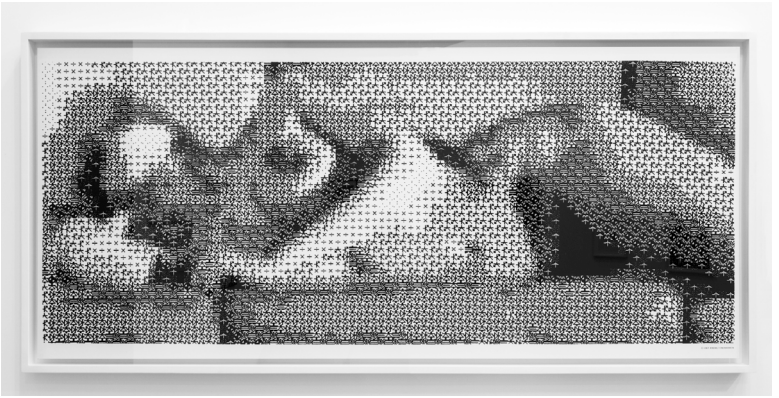

Fig. 120: Ken Knowlton and Leon Harmon, *Studies in Perception I (Deborah Hay)*, 1967 (screenprint, 86.4 × 185.4 cm)

Fig. 121: Thomas Ruff, *nudes er21*, 2000 (144.7 × 94.5 cm)

In the 1970s, the work of Knowlton and Harmon was not unknown in Germany. Herbert F. Franke and Gottfried Jäger's important book *Apparative Kunst: Vom Kaleidoskop zum Computer* – one of the earliest publications focusing on computer-generated art in Germany – acknowledges both of them.[116] It also extensively quotes A. Michael Noll, who also worked at Bell Labs. But as the evaluation of the construction of specifically German documentary forms has shown, the paradigm Düsseldorf photography embodies from the 1980s until today has to a certain extent ignored forms of generative or abstract photography (e.g., Otto Steinert or Gottfried Jäger), as it had excluded non-Düsseldorf documentary photographers (e.g., Joachim Brohm or Manfred Hamm). The Düsseldorf School has become such a strong

116 Herbert W. Franke and Gottfried Jäger, *Apparative Kunst: Vom Kaleidoskop zum Computer*, Cologne, Verlag M. DuMont Schauberg, 1973.

label – whose endorsement by the art market still ought to be evaluated – that its historicization has focused on a discursive field based on the documentary tradition and painterly models, which has limited its comprehension. Yet, these early digital imaging systems are interestingly echoed in Thomas Ruff's work based on appropriated digital image files. But if the strategy used in the *nudes* hints at the deconstruction of an image into discrete elements, characteristic of Knowlton and Harmon's "photograph," the association between them and Thomas Ruff's work becomes even more explicit in the *jpegs*.

Fig. 122: Thomas Ruff, *jpeg ny02*, 2004 (269 × 364 cm)

"jpegs"

The starting point of the *jpegs* series similarly resides in the use of imagery (mostly) found on the Internet, often connected to particular political events covered by media or reminiscent of images circulating on the web or in newspapers, without any particular historical importance. Ruff states that the initial influx for the series came from the photographs of the 9/11 attacks,[117] whose cultural pregnancy and sociohistorical significance are increasingly interpreted as symptomatic for a new globalized image circulation system.[118] The myth of their inception states that Ruff was in New York on September 11, 2001, main topic of the series (see Fig. 122). But for undetermined reasons, all the pictures he shot that day were lost, probably due to x-rays or camera failure, which led him to an appropriative approach.[119] As he didn't have images to work with, he became interested in the visual transfiguration in the media of such a traumatic event. He created a whole series based upon the original experience with the Twin Tower pictures,

117 See for example interview of Thomas Ruff by Max Dax, in *Spex. Magazin für Popokultur*, reproduced in Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 72.

118 See for example Clément Chéroux, "Le déjà-vu du 11-Septembre," *Etudes Photographiques*, No. 20, 2007.

119 See for example Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 126.

adding small jpegs of natural disasters, accidents, terrorist attacks or consequences of warfare, mostly downloaded from the web. Sometimes he takes images himself with a small digital camera or uses photographs taken from books or postcards.[120] The obtained digital files are re-compressed at the "worst possible quality"[121] and retouched to a certain extent. The visual structure of the jpeg algorithm is enhanced, making visible the double level pixilation (see Fig. 124), which remains invisible if the large prints are seen from afar, but which gradually appears as the beholder approaches. The second type of editing addresses the hue and saturation of colors, which has been interpreted as a way to "emphasize the digital origin of the found images."[122]

The series, first exhibited in 2005 at the Zwirner Gallery in New York and in the Mai 36 Gallery in Zurich,[123] mostly spans from 2004 to 2008[124] and numbers 155 photographs according to Carolyn Christov-Bakargiev,[125] roughly 120 according to Christiane Grathwohl-Scheffel,[126] a count difficult to verify as no compete list is available and as some images are only available in selected galleries. A selection of sixty-three (undated) photographs has been published as a book by Aperture in 2009[127] and the Galerie Mai 36 in Zurich has a work list of sixty-five images.[128] The project addresses images depicting events that have entered the collective consciousness through their circulation in the media, and whose iconicity stands for that particular moment. As several scholars have shown, media coverage of a particular event is increasingly limited to a very small number of images. Clément Chéroux has, for instance, evaluated the images of the 9/11 attacks used by ninety American newspapers and concluded that roughly 72 percent of them were distributed by the Associated Press, obviously limiting the diversity of possible depictions of the attacks.[129] André Gunthert has similarly shown that the front pages of 442 newspapers covering the 2005 terrorist attacks in London used news agencies' images almost systematically, with only nine photographs coming from amateur or independent sources.[130] Those iconic photographs, which stand for "five, ten or one hundred other images" – Ruff calls them "exemplary" [exemplarisch][131] – constitute the core element of Ruff's investigation of contemporary visual culture,

120 Interview of Thomas Ruff by Guy Lane, October 24, 2009, on Foto8.com. Available at http://www.foto8.com/live/thomas-ruff-interview/, accessed on June 27, 2018.
121 Ibid.
122 Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 126.
123 See exhibition listing in Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 274.
124 According to Ruff's latest monograph the series is ongoing. See *Thomas Ruff. Works 1979 – 2011*, exhibition catalogue op. cit., p. 196.
125 In the most up to date monographic publication on the artist. See Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 126.
126 Christiane Grathwohl-Scheffel, "Cosmos of Images," in *Thomas Ruff. Schwarzwald. Landschaft*, exhibition catalogue (Museum für Neue Kunst, Freiburg, 2009), Nuremberg, Verlag Museum für neue Kunst, 2009, p. 30.
127 Bennett Simpson, *Thomas Ruff. jpegs*, New York, *Aperture*, 2009.
128 Email correspondance with the Gallery Mai 36, February 2013.
129 Clément Chéroux, op. cit.
130 André Gunthert, "'Tous journalistes?' Les attentats de Londres ou l'intrusion des amateurs," in Gianni Haver (ed.), *La photo de presse. Usages et pratiques*, Lausanne, Antipodes, 2009.
131 See interview of Thomas Ruff by Guy Lane, op. cit.

particularly through their distribution on the Internet. Image posting or re-blogging, often without any copyright or source information, is a very common practice on the web nowadays, while official media (in print and online) use a more traditional image managing economy. Iconic, easily recognizable pictures of well-known events thus constitute an important part of the series, whose relationship with a visual referent thus considerably differs from the *nudes*, whose circulation is widespread but very secretive.

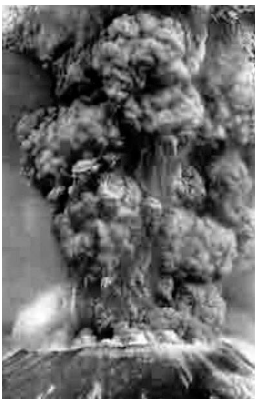

Fig. 123: Thomas Ruff, *jpeg msh01*, 2004 (276 × 188 cm)

Ruff voluntarily produces many images that are difficult to trace and that do not necessarily point to a particular moment in time. All of them are not iconic. The series thus produces a productive dialectical response of the beholder confronted with those images, who either immediately recognizes their origin – as for example the 9/11 pictures (e.g., *jpeg ny02*, 2004, Fig. 122) – or is solely confronted by a familiar visual grammar, without being able to trace its referent. Many images consequently acquire a generic status, with type-images standing for a type-event – war, terrorist attack or natural disasters – rather than a specific moment in time or a geographical location. The process is gradual rather than discrete, as the images range from easily recognizable images such as the burning twin towers to the close-up of a palm tree forest (e.g., *jpeg pt01*, 2006) that cannot be correlated to any particular moment or place. All the "intermediate" stages, like, for example, tombs in a rocky terrain in the mountains (e.g., *jpegs ag1* and *jpegs ag2*), might lead the beholder to associate them with images seen in the news, – in this case, the memory (and the titles) may point to Afghanistan. Less explicitly, a temple in a tropical forest might suggest Southeast Asia (e.g., *jpeg ca03*, 2004). In those two cases, the initials either enhance the generic nature of the picture – "pt" in *jpeg pt01* probably stands for palm tree –, or, on the other hand, they point in a particular direction: "ca" in *jpeg ca03* is probably the short form of Cambodia. Ruff thus addresses various levels of interpretation of the images, accessing the visual memory of the viewer. While some images allow an explicit pinpointing of an event, allowing the viewer

to understand the series or have access to its mechanisms, most images rather remind viewers of images that are recognized as familiar but cannot be identified clearly. Further images rather embody recognizable type-images, whose grammar or overall formal construction appears familiar without being linked to explicit knowledge or an explicit source.

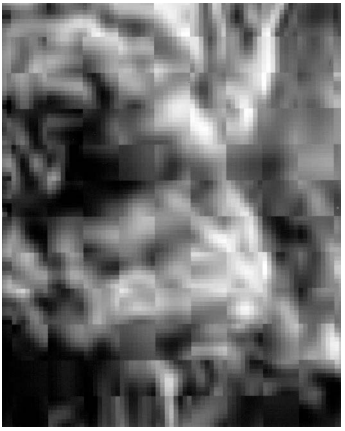

Fig. 124: Thomas Ruff, *jpeg msh01*, detail

This dialectical relationship between the recognizable and the familiar – the specific and the generic – is further expressed through another movement, physical for instance, implicating the spatial experience of the *jpegs*. The act of recognizing the picture implies a certain distance from the print, while a close-up inspection only reveals the digital structure and formal construction, preventing the beholder to grasp it as a whole. "'Seeing' and 'recognizing' cannot occur in a single gaze," as Valeria Liebermann notes,[132] a phenomenon that is intensified by the extremely large formats. While enlargements or zooming of high-resolution images (those taken with a large-format camera, for example) increases the amount of readable information, in Ruff's case the result is only the extrusion of the pattern of the image[133] – the pixelated structure and the manifestations of the jpeg compression algorithm – producing a semantic dead end.[134] The paradigmatic example of an attempt to enlarge an image to reveal more information, quoted repeatedly by Ruff's commentators, Michelangelo Antonioni's *Blow Up* (1966), shows that a synthetic gaze from a distance often produces more information than the blowing up of an image. In the context of digital image editing processes, it is further

132 Valeria Liebermann, "Dissolving the Image," *Foam*, No. 13, Winter 2007 – 2008, p. 113.

133 Maren Polte, *Klasse Becher. Die Fotografieästhetik der "Becher Schule,"* op. cit., p. 136.

134 The effect works to a certain extent with the large-format *Aperture* publication (28.3 × 381 cm), while being ineffective on a regular computer screen or average-sized catalogues. See Bennett Simpson, *Thomas Ruff. Jpegs*, op. cit. The artist booklet (17 × 12 cm) *Thomas Ruff. jpeg ny03* circumvents the problem, by decomposing *jpeg ny03* into small portions of the picture, printed on every page, thus only showing the pixel structure and withholding the bigger picture. See *Thomas Ruff. jpeg ny03*, Cologne, Salon Verlag, 2005.

interesting to note that in the movie the attempts to blow up the analogue photograph fail; the enlargements are resolved into structural raster, a feature often invoked to emphasize the weaknesses of digital media. Obviously, Thomas Ruff's series addresses the 72-dpi structure of the images used, whose quality could be considered poor, compared to high resolution photographs, digital or analogue. But if their actual use is taken into account, their widespread dissemination on the web and their consumption on computers and smartphones, the focus shifts toward the construction of the meaning of an image though its mediation, rather than through its strict connection to its referent, to what is photographed. It then appears that it is less the low quality or the loss of information that in fact matters in the series than the fact that these images nowadays constitute the main visual vector of knowledge *despite* their low quality, through their widespread diffusion and through the imprint they leave in the collective consciousness. As soon as an image of 9/11 is acknowledged as such, the amount of information contained in that very image is pointless, as memory and visual culture reconstruct its meaning. In that respect, Ruff operates and witnesses a shift away from the strict referential features of photography in the semiotic sense, theorized under numerous forms or concepts such as indexicality, to build upon an expanded (or extended) field of reference, defined by its circulation and its perception, and mediated by verisimilar rather than "indexical" images.

The construction of such an expanded field relies, as noted earlier, on various degrees of recognizability of the images. In order to identify them more clearly, it is useful to suggest a categorization of the photographs of the series. According to Ruff, they can be divided into several groups. Catastrophes created by men, initiated by the 9/11 attacks, was the first batch he undertook and depicts specific wars (e.g., bombing of Baghdad, burning oil fields in Iraq, etc.; see for example *jpeg wi01*), warfare technologies, which are not necessarily connected with a specific conflict (e.g., nuclear bomb testing in the Bikini Atoll, missiles, etc.) or terrorist attacks (e.g., 9/11). This particular group pre-eminently embodies Ruff's interest for the circulation of media imagery: "catastrophic" events are particularly resilient in the collective consciousness, many of those images thus retain a strong connection with media or physical realities. The 9/11 pictures constitute the core body of images, as the representation of this particular event provides at least fifteen to twenty images[135] that depict the towers or the debris at Ground Zero. The historic circulation of these imageries is also addressed by Ruff, as he reflected on recent events, but also on images that have remained in the collective memory through time, such as nuclear bomb testing in the Bikini Atoll in the 1940s and 1950s. With such examples he confronts the viewer with a visual history in the strict sense but also with more elaborate reflections on the role of these images in history. For a photographer or a photography historian, the

135 As no complete worklist of the *jpegs* exists, there might be other examples. The *jpeg ny* series showing the towers goes up to *jpeg ny15*. Several other images are connected to 9/11, such as *jpeg de01* (debris), *jpeg td02* (smoking towers), *jpeg co01* (collapsing tower), according to the Mai 36 gallery work catalogue and Internet research.

atomic bomb might recall the image of a nuclear bomb in the next-to-last room of *The Family of Man* exhibition in the MoMA in 1955, curated by Edward Steichen, which exemplifies Ruff's interest for the political implications of such iconography. But Ruff also implies phenomenological issues, as the relationship between image and trauma constitutes an evident articulation of this body of work. Ruff interrogates images connected to violent or traumatic events, evaluating their status in contemporary visual culture. Although conceptual and auto-reflexive, the series clearly addresses the beholder's reaction to them in an interrogation of the implications of images in media, or images as media.

The second category shows photographs of disasters created by nature, such as volcano eruptions (e.g., *jpeg msh01*, 2004, Fig. 123) or floods (e.g., the tsunami flooding in Southeast Asia in 2004). While in this case some images are recognizable, they often circumscribe generic natural catastrophes, without a pre-existing visual model. They embody type-images, whose typology has entered the collective consciousness. The third group shows contemporary man-made creations, architectural landmarks such as skyscrapers or stadiums (e.g., the Allianz Arena Munich in *jpeg dhem05*), which could be opposed to antique made-man creations (e.g., temples in Cambodia, etc.), conquered by nature. This final topos – nature – constitutes the last category, which represents images of pristine, untouched nature. If Ruff often emphasizes the fact that it is actually man-made[136] – he recalls spending holidays on an artificial island created for Western tourists, where sand and palm trees were brought in –, some images of the series also depict real locations. *Jpeg sl01*, *jpeg sl02* and *jpeg sl03*, all made in 2007, depict wilderness in the Black Forest in Germany, the prefix "sl" in the title referring to *Schwarzwald* and *Landschaft*, the name of a recent exhibition displaying many photographs taken in Ruff's home region.[137] But rather than a comment on original or primitive nature, these photographs address an environment which is now increasingly controlled, shaped and organized, despite looking original or natural. Its depiction through type-images serves advertising and merchandizing industries and constitutes the vision of what nature might or ought to look like in the collective consciousness. The process pushes Paul Virilio's thesis that representation now preceded real even further: representation has become that reality and has supplanted it.

As in many of Thomas Ruff's series, a sub-categorization of Jacques Herzog and Pierre de Meuron buildings can be found in the jpegs. If the *jpeg* series contains some iconic buildings from other firms, such as the Burj tower in Dubai – the world's tallest monument at this time –, most contemporary architecture displayed has been realized by the two architects from Basel. Tagged "*hdem*," the acronym for Herzog and de Meuron, the body of images shows a Ricola administrative building in Laufen Switzerland (1999), the Dominus winery in the Napa Valley, California (1998), the De Young Museum in San Francisco (2005), the Eberswalde Library (D), the Allianz Arena

136 Interview of Thomas Ruff by Guy Lane, op. cit.
137 *Thomas Ruff. Schwarzwald. Landschaft*, exhibition catalogue, op. cit.

in Munich, the Edificio Forum in Barcelona, named *hdem 01* to *hdem 06* respectively. The sub-series contains at least these six images, none of which is contained in the *Aperture* publication,[138] which is instead focused on disasters. The presence of the *hdem* pictures suggests a sub-layer in the series, which could be interpreted as addressing the visual culture of a public oriented toward, while the whole series would rather express a less specific visual culture, centered on media. The series further reflects Thomas Ruff's personal ties with the two architects.

The Internet and new visual economies

When read in relation to the *jpegs*, the *nudes* suggest an interestingly diverging relationship between the image and what is depicted in the photograph. Pornography might be tagged fictional, as *actors* are performing scenes and events. If it retains a degree of realism, acted sexual intercourse remains sexual intercourse. Ruff's *nudes* series thus addresses a type of imagery that has no concrete relationship to reality (an "authentic" scene that has supposedly taken place in time and space) – except the fact that it is actual sexuality and not simulated sexuality. But it *does* produce the fantasies the audience demands, declined in various categories, despite this distance from reality. The outcome is eminently generic, as the "blonde" or the "orgy" appeals to a reality constructed by the viewer and doesn't refer to a particular "blonde" or a particular "orgy" in time or space[139] but retains a connection to a reality, as a pornographic image is necessarily pornographic. The reality constructed by the viewer through the *jpegs* is a similar cognitive reality, save the fact that the tautological relationship that exists in pornography, the knowledge that depicted sex is necessarily sex, vanishes in the *jpegs*, as only the knowledge and the image remain. As such, the *nudes* could be interpreted as a first step in Ruff's interrogation of the construction of meaning through imagery found on the web, confronting fictitious images with the viewer experience. While the *jpegs* presumably show real events, Ruff shows to which extent such images acquire an autonomous presence and are read *as* reality, rather than as a depiction of it. The variety of categories in the series, ranging from easily recognizable images referring to actual events or places to familiar type-images without a known referent, reflects upon the process of reading them, showing that they are equivalent to the viewer. The digital filtering grid, achieved through the pixilation and the algorithmic structure, subordinates them to their digital structure and digital distribution vector, the world wide web.

138 Bennett Simpson, *Thomas Ruff. Jpegs*, op. cit.

139 Except for the category "reality," which displays sex tapes of "real" individuals (sex tapes showing stars, amateur pornography, etc.).

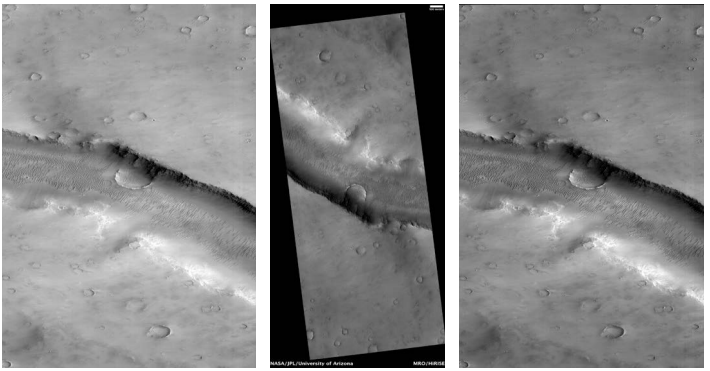

Fig. 125: Thomas Ruff, *ma.r.s. 06*, 2010 (256 × 186 cm)
Fig. 126: *HiRISE Image PSP_003273_1675, Evros Vallis and Nearby Craters* (NASA/JPL/University of Arizona)
Fig. 127: Equivalent to *ma.r.s. 06* created by the author from NASA footage

3 AUTOMATED IMAGES AND 3D EFFECTS: THOMAS RUFF'S *MA.R.S.*

Thomas Ruff's recent *ma.r.s.* series relies on the appropriation of photographic material not captured by the artist himself, similar to the *jpeg* and *nudes* series. While the source material has also been downloaded from the Internet, it addresses yet another image circulation apparatus. In recent years, numerous scientific image databases have been made available to Internet users. The photographic holdings of important cultural and scientific institutions, such as the Library of Congress or NASA, became accessible on their respective websites, often in high-resolution and non-compressed image formats (e.g., TIFF). With the increase of Internet speed and the intensification of digitalization of visual material by various institutions (e.g., museums, archives, etc.) – often the outcome of digital conservation strategies –, numerous photographs from various scientific fields have been made available to the public. (e.g., aerial photography, historical data, astronomical imagery, etc.). For his *ma.r.s.* series (2010 – 2013), Thomas Ruff has used high-resolution photographs made by NASA's *Mars Reconnaissance Orbiter* spacecraft since 2006. The images taken with a HiRISE camera are sent via satellite to Earth and are freely distributed on their website for research purposes.[140] Thomas Ruff has repeatedly stated his interest in astronomy,[141]

140 The HiRISE camera photographs in high-resolution (1 pixel = 30cm). It operates in wavelengths visible to the human eye, but also in near-infrared range, allowing determining the mineral nature of the photographed Mars soil. Laser readings with the MOLA (*Mars Orbiter* Laser Readings) further allows creating elevation maps from the pictures. The images are made accessible online for the scientific community, and even observation requests can be submitted. See marsoweb.nas.nasa.gov/HiRISE, accessed on August 21, 2018.

141 Most recently in "Thomas Ruff in Conversation with Hans Ulrich Obrist," in *Thomas Ruff*, op. cit., p. 3.

a curiosity first expressed in the *Zeitungsfotos* already through various photographs of constellations, planets or space exploration (e.g., *Zeitungsfoto 031* and *Zeitungsfoto 032*, 1990). But the 146-print *Sterne* series (1989 – 1992) constitutes Ruff's main work group connected with astronomy. These photographs are based on appropriated 29 × 29 centimeter negatives of the starry sky of the southern hemisphere, taken by the European Southern Observatory (ESO).[142] His longing interest for the subject has for instance been formalized as an exhibition in the LWL-Landesmuseum für Kunst und Kulturgeschichte Münster under the title *Thomas Ruff: Stellar Landscapes*. It combines all series concerned with astronomy (*Sterne*, *Cassini*, *Zycles*, *ma.r.s.)* and numerous photographs of the *Zeitungsfotos*, *Nächte* and *jpegs* concerned with the subject.[143] In these various work groups, found imagery plays an important role. The *Sterne*, the *Cassini* and the *ma.r.s.* series use appropriated material, provided by the main space agencies (i.e., the ESA[144] and NASA). Like with the *Sterne* created twenty years earlier, Ruff uses high-resolution photographic material. The oblong images from the Mars surface can exceed 1Gb, 20,000 times more than an average jpeg (50 kb) found on the Internet.

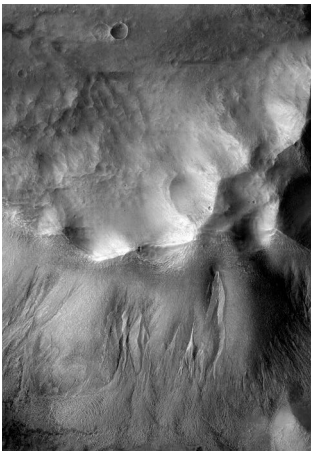

Fig. 128: Thomas Ruff, *3D-ma.r.s.03*, 2012 (255 × 185 cm)

Colorization

After the selection process where Ruff chooses portions of the source files, he extensively retouches the photographs, producing a result he situates between the "realistic" and "the fictional,"[145] a stance repeatedly mentioned in interviews and reflected upon by critics. Many images are clearly reminiscent of a planet through the presence of craters, but some could be associated with sand dunes

142 Matthias Winzen, *Thomas Ruff. 1979 to the Present*, op. cit., p. 193.
143 See *Thomas Ruff. Stellar Landscapes*, exhibition catalogue (LWL-Landesmuseum für Kunst und Kulturgeschichte Münster, 2011 – 2012), Berlin, Kerher, 2011.
144 European Space Agency.
145 See "Interview of Thomas Ruff by Sandra Hofmeister," p. 50 – 51.

or macroscopic views of mineral substances. Color plays an important role in that de- and re-contextualizing process. The originally black and white images[146] are colorized in earthy colors (Fig. 125), reminding the surface of the "red planet" (orange, red, brown, sand, gray, green, blue). Colorization of the images clearly answers to compositional and aesthetic features. But epistemological concerns are also addressed, echoing an important aspect of the history of science. Color has been widely used to highlight elements of scientific imagery – as much in biology as in astronomy –, and photographic representations completed with chromatic data have been historically constructed as being scientific.[147] Ruff himself proves aware of such scientific discourse:

> *In thinking of NASA pictures, everybody has in mind the fantastic photographs of intergalactic mist or stellar clusters made by the Hubble Space Telescope. In fact, color is very common in astronomical photography. That has driven us to a very multicolored conception of the universe [...]. But colors in space are relative. The various kinds of light as we see them are only a very small portion of the diversity of electromagnetic waves that exist in space. In coloring the Mars photographs, I sometimes used scientific references, and sometimes my imagination.*[148]

Ruff emphasizes the subjective nature of representative protocols used in astronomy, which are used concomitantly with photography. The HiRISE camera for instance, is able to generate color images, but the visual outcome is calculated using measurements recorded with a laser and is not *per se* photographic, although the process obviously challenges the very idea of photography (laser *is* a light beam). He further points at the fact that for the non-scientific observer, these images become reality, especially since the represented stellar clusters or intergalactic mist cannot be compared with a referent in the physical world. As such, the colorization of his images is not a strictly formal or aesthetic feature. The digital process engages primarily with the perception of these images, which Ruff calls his first landscape photographs.[149] But in order to grasp the modalities of this movement, another main digital post-productive operation of the source images ought to be discussed: the perspective shift.

146 The use of laser measurements also allows NASA to produce modeled color images, even though the photographic images as such are taken with a black and white camera. See marsoweb.nasa.gov/HiRISE, accessed on August 21, 2018.

147 See for example Lorraine Daston and Elizabeth Lunbeck, *Histories of Scientific Observation*, Chicago, University of Chicago Press, 2011.

148 See "Interview of Thomas Ruff by Sandra Hofmeister," *DAMn° Magazine*, No. 32, March 2012, p. 50.

149 *Kultur 21. Unbekannte Landschaften – Das Universum des Thomas Ruff*, documentary film, Die deutsche Welle, 2011.

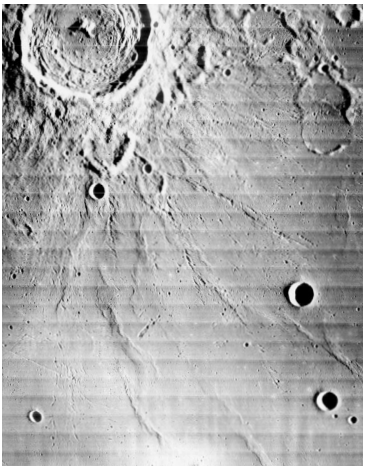

Fig. 129: Image of the moon surface transmitted by *Lunar Orbiter I*, 1967

Perspectives and 3D

Besides the colorization, the images have been cropped and digitally retouched in order to achieve a 3D effect, similar to a diagonal bird's-eye view.[150] The HiRISE camera has originally taken the images orthogonally (see Fig. 126). But Ruff reframes and stretches them geometrically, in order to create an image that appears to be taken from a lower angle. In the source image of *ma.r.s. 06*, the crater in the middle bears a strictly round shape due to the orthogonal capture. In Ruff's photograph, it has an elliptical shape, suggesting another perspective. The operation is extremely simple when using digital retouching technologies but would imply a much more complex apparatus, if done with an analogue image (e.g., an exposure unit, which allows the negative to be projected with distorted optical parameters on photo-sensitive paper). As the computer calculates the new perspective according to mathematical data, the outcome only slightly differs from a shot (e.g., projected shadows, etc.), which would have been taken at the theoretical location where the perspective lines would merge (or where the theoretical observer would be situated). Even though *ma.r.s. 06* is an anamorphosis of the image captured by the HiRISE camera, the resulting photograph is – to a certain degree – optically correct, unlike Andreas Gursky's *Rhein II* mentioned earlier. Fig. 126 shows the source image of Ruff's *ma.r.s. 06*, which has been modified with a 3D effect filter in Adobe Photoshop. The produced image is almost identical to Ruff's photographs, which is revealing of the photographer's creative process. While the original black and white images appear to be the outcome of scientific imaging systems

150 Thomas Ruff commenting on the perspective change says that he "squashed these images, hence generating a pseudo perspective – a new point-of-view, much like observing the Mars landscape from an aeroplane." See "Interview of Thomas Ruff by Sandra Hofmeister," *op. cit.*, p. 51 – 52.

– suggested by various meta-tags, legends and the protocolled rigor of a strictly orthogonal view –, *ma.r.s. 06* possesses a more suggestive formal construction. The shift of point of view places the beholder in the position of a traveler, while the original images retain a scientific character. Based upon a strict protocol, the HiRISE photographs are reminiscent of the work of the Bechers, with their assumed bi-dimensional work and lack of visible authorship. Ruff's image clearly endorses an aesthetic stance and possesses a suggestive character, addressing a "utopian" or "romantic" vision of space, as the (very recent) critical literature acknowledges.[151]

In the shift between scientific imagery and evocative photographs, perspective and orthogonality play a central role, an aspect further emphasized by a recent declination of the series. In 2012, Ruff has created 3D versions of some Mars photographs, using different sources images. The *3D-ma.r.s.* series bears two specific interconnected traits, which sets it apart from the earlier 2D examples. Ruff has edited the images with a red and green filter, which produces a three-dimensional effect (for the beholder), when used with special 3D glasses chromatically matching. In the process, Ruff reflects upon an important trend of the late 2000s in cultural industries. Numerous film productions are now digitally projected in 3D in theatres and as much television set manufacturers as pornography producers have endorsed the trend as well. But while these fields resort to digitized, elaborate 3D coding processes,[152] Ruff uses a very primitive (analogue) technical trick, known since the mid-twentieth century:[153] the paper glasses with a red and a green lens. The other distinctive aspect of the *3D-ma.r.s.* series resides in the use of source material in which the perspective has not been modified. Most 3D images are orthogonal photographs – craters are round and not elliptical (see Fig. 128) – the 3D effect being achieved by the dichromatic filters and the reception by the viewer. Both series thus possess an immersive character, but while the first (perspective change) occurs in the viewers' mind and confronts him with his familiarity of landscape imagery, the second (red-green filter and glasses) operates optically, shaping his perception of the image. A key process of the *ma.r.s.* and the 3D *ma.r.s.* series therefore resides in the re-contextualization of the appropriated images, which can be associated with a scientific discourse – the terminology of the titles (in *ma.r.s.*, but also in the *Cassini* series) and the repeated mention of the NASA source, spacecrafts or the used apparatus inscribes the series in a specific field –, while deconstructing the visual characteristics of scientific representation (i.e., orthogonality, black and white imagery). On the other hand, the

151 Melanie Bono for example assesses the series as a transformation of a "supposed reality, [...] preconditioned by the media, into dreamlike scenarios focused on the utopian nature of space and space travel." See Melanie Bono, "Stellar Landscapes," in *Thomas Ruff. Stellar Landscapes*, op. cit, p. 54.

152 See *Les cahiers du cinéma*, No. 672 ("Adieu 35. La révolution numérique est terminée"), November 2011.

153 The Gagosian Gallery catalogue reproduces the dichromatic images and the paper glasses, which extends the project. See *Thomas Ruff*, essay by Geoff Dyer and interview with Thomas Ruff and Hans Ulrich Obrist, op. cit.

colorization seemingly inscribes the series in an aesthetic approach, but while the visual impact of the large format images is unquestionably central, the process is also reminiscent of scientific protocols, whose result is particularly resilient in the layman's eye.

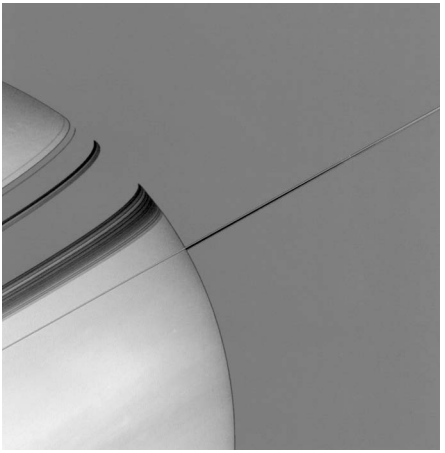

Fig. 130: Thomas Ruff, *cassini 16*, 2009 (108.5 × 108.5 cm)

Automation and self-reflexivity

The genesis of the series and Ruff's work process highlight his interest in contemporary forms of photography and of its circulation and distribution, as well as the technical aspect of the capturing apparatus. In this particular case, photography converges with astronomy in a technical sense. The HiRISE camera combines photographic capturing technology with the lens of a telescope.[154] The device itself is transported through space in order to photograph a planet and sends back to Earth the images across considerable distance. But besides the capturing process itself, Ruff's project addresses another noteworthy parameter of the photographic apparatus that ought to be discussed: the *automation* of the capturing. Unlike many conventional photographic approaches, the *ma.r.s.* images have not been taken through the action of an operator but are completely automated. The capturing device is commanded by mathematical data, such as geographical tags, set time lapse or the interaction with sensors, but not by human hand. While technically this is not new – time-lapse photography (e.g., chronophotography) or delayed shutter release have, for example, existed since the end of the nineteenth century – it reflects an increasingly ubiquitous phenomenon in contemporary photographic uses. Nowadays, numerous images are shot without the intervention of a

154 While a camera (commonly) records visible light only, telescopes are sensitive to various ranges of wavelengths (e.g., infrared, X-ray, radio waves, etc.), considerably extending the spectrum of available data. See for example www.wikipedia.org/wiki/telescope, accessed on June 27, 2018.

human operator, a phenomenon Ruff indirectly reflects upon.[155] Drone or satellite data is recorded systematically and automatically, according to pre-set parameters. Digital technologies considerably simplify these operations, and the phenomenon has been addressed by a growing number of artists (e.g., Doug Rickard, who uses Google Street View images or Raphaël Dallaporta, who uses a camera attached to a drone) and exhibitions (e.g., *Le mois de la photo à Montréal 2013* subtitled "*Drone: The Automated Image*," curated by Paul Wombell).[156] Clearly, automated imagery (still or video) constitutes an increasingly important visual source, which entails various transformations that Ruff reflects upon. The point of view and the object of the photograph differ, as many of those operational images are the outcome of aerial or satellite photography. Their formal construction varies accordingly, as the process of framing is automated. Finally, the role of the photographer shifts from the capture of the image to the selection from a multitude of visual sources, an aspect already addressed by Ruff or by Sasse in earlier projects. If at some point the outcome of those technologies seems to correspond to the modernist fantasy of technology improving human perception, the downside might be the fact that the human is withheld from the equation – except from the perspective of the beholder. That shift becomes particularly apparent and explicit in the *ma.r.s.* series, as the visual material is produced 55,000 million kilometers from Earth, a distance the *Mars Orbiter* covered in roughly seven months. As such, the image is probably one of the most remote photographs ever taken, and echoes one of the first "digital"[157] images, transmitted similarly with a Kodak camera by NASA's *Lunar Orbiter* in 1967 (Fig. 129). While such images have existed for quite some time,[158] they were accessible through specialized publications only. The access to the rough data – for research or for leisure purposes – constitutes an important change of paradigm in the circulation of such imagery. The accessibility of databases such as NASA's high-resolution HiRISE image interface reflects an expanding phenomenon, which takes place concurrently with the spread of low or average quality jpegs, omnipresent on the Internet. High-quality photography is very often connected with research, used as much in humanities as by scientific disciplines, because managing databases with important amount of data remains complicated, expensive and economically unviable, except for with specific purposes (e.g., image databases for the press). But clearly it constitutes an alternative to the open web, often unavailable with common image research engines.

155 For an introduction on these processes and an early attempt of their categorization see Claus Gunti, "L'image automatisée, entre drones et apropriation," in Claus Gunti (ed.), *Décadrages. Cinéma, à travers champ*, No. 26 ("Drones, cartographie et images automatisées"), Autumn 2014.

156 See Paul Wombell (ed.), *Drone. The Automated Image*, exhibition catalogue (Le mois de la photo de Montréal, 2013), Bielefeld/Berlin, Kerber Verlag, 2013.

157 The images of the analog film camera were developed in the Orbiter with a Kodak process similar to Polaroid. They were then scanned and transmitted to Earth.

158 An important amount of NASA data of the early ages of digital storage has been lost, as the fantasy of unlimited storage did not consider its technical contingencies and its unsuspected obsolescence.

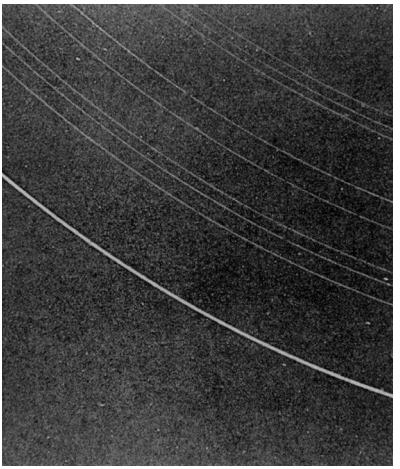

Fig. 131: Thomas Ruff, *Zeitungsfoto 354*, 1991 (b/w, 331 × 28 cm)

Image, reality, index: "*ma.r.s.*" and "*Cassini*"

More than any other object, Mars does not constitute a physical reality, despite its various associations – as a planet potentially harboring living organisms (from a scientific perspective) or as a remote fantasy (correlated to science fiction or space exploration). No human being has ever set foot on its surface or even remotely approached it. As such, photographs of Mars operate as surrogates for the physical planet, more than the equivalents of the moon. Its photographic representation *becomes* its reality, and Ruff's deconstruction of the various modalities of the photographic apparatus – particularly the interrogation of indexicality through the anamorphoses of the series – thus questions the relationship between objects, their representation and their perception by a viewer. A key strategy in this process relies on the shift in context of the image. The outcome of an elaborate, expensive, scientific imaging apparatus, the photographs are decontextualized, fictionalized and associated with various visual referents: the images could rather be linked with travel imagery or landscape photography, craters suggesting generic space exploration, more than they inform about the study of the Evros Vallis (see Fig. 125). Somehow paradoxically, the distanciation from photographic transparency and the references to the indexical images of the surface of Mars, is achieved by focusing on the perception of the images: the 3D *ma.r.s.* photographs create a more immersive view of the Mars surface, which could be correlated with augmented reality. But while seemingly documentary, the self-reflexive strategy addresses the apparatus – as often in Ruff's work – and interrogates the construction of a visual output, rather than the source referent.

The ongoing *cassini* series, started in 2008, works very similarly. The photographs are based upon images taken by the NASA Cassini spacecraft, launched in 1997, which photographs Saturn and its moons since 2004 (see Fig. 134). As in the *ma.r.s.* series, the visual

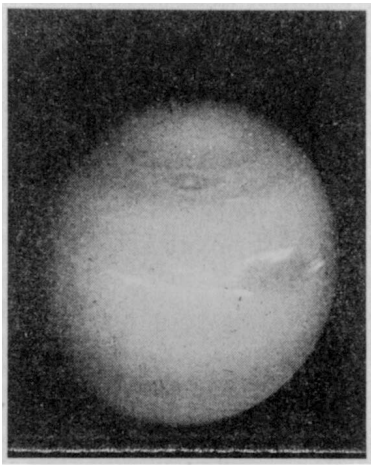

Fig. 132: Thomas Ruff, *Zeitungsfoto 072*, 1991 (b/w, 16.6 × 13.5 cm)

data is freely available on the Internet.[159] The images are heavily retouched, in order to enhance the graphic characteristics of scientific imagery. Although in some examples Saturn remains clearly identifiable with its distinctive rings (e.g., *cassini 10*, 2009, Fig. 133), many photographs of the series look like digitally generated abstract patterns, such as *cassini 31*. If the name of the series, contained in the individual titles of every picture, clearly points to the spacecraft and thus implicitly to Saturn, most images proceed graphically and consequently "lose the capacity that is attributed to them of 'having a meaning.'"[160] In this case, this shift is not achieved by the perspective corrections, which manipulates the viewer's perception of the images, but through the graphical editing. In *cassini 16* for example (Fig. 130), the dark portions of the planet and the background (i.e., space) have been replaced by a single plain color, deconstructing the three-dimensional construction of the image and explicitly pointing at digital post-production tools. This genesis of this particular effect and the motive can already be found in Ruff's atlas of photographs, the *Zeitungsfotos*. *Zeitungsfoto 354* (Fig. 131) shows the two-dimensional structure of the Saturn rings, resulting in an abstract image, which could be associated with examples of *generative Fotografie*. *Zeitungsfoto 072* displays Ruff's interest for Mars (Fig. 132). The two-dimensional focus on the picture surface is also evident in *cassini 31*. In this case, rings of Saturn are shown orthogonally, producing a strictly two-dimensional image, which serves as a model for Ruff's forthcoming projects.

159 *Thomas Ruff. Works 1979 – 2011*, op. cit., p. 210.

160 Alexandra Matzner, "Thomas Ruff. *Zycles* and *Cassini*. Beyond the Horizon," *Eikon*, No. 69, 2010, p. 14.

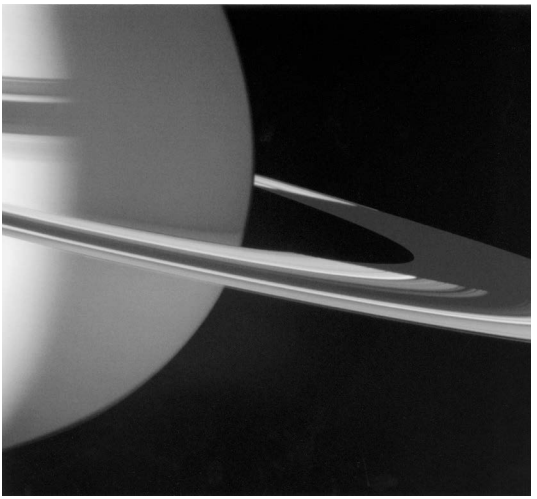

Fig. 133: Thomas Ruff, *cassini 10*, 2009

The double shift toward and away from bi-dimensional image constructions operates paradoxically in the *ma.r.s.* and the *Cassini* series. While numerous work groups could be interpreted as being symptomatic of Ruff's preoccupation with the image surface – a focus clearly visible in the *Cassini* –, the *ma.r.s.* images reverse that movement, reconstructing a 3D perspective. But through that process, Ruff shifts the focus toward the observer, using the perspectival change as a vector, which highlights the viewer's visual culture. In that case, the orthogonal source images correspond to the scientific representation of a physical reality, while Ruff's 3D pictures function as a reflective surface, on which the observer projects his preconditioned vision of the subject. The work on the *jpegs* has interestingly shown that while representing a three-dimensional space – unlike the orthogonal *Häuser* or *Porträts* – the recycled *jpegs* remained orthogonal, structured by the two-dimensional pixel grid. The important alteration brought by the *ma.r.s.* images lies in the understanding that any image showing a three-dimensional space remains two-dimensional. Throughout the 1980s and 1990s, Ruff – much as Andreas Gursky or the Bechers before them – has sought to produce a correspondence between the physical reality and the photograph, aligning various motives on a two-dimensional picture plane. Since the late 1990s, he increasingly depicted images, which seemingly undermined that equivalence – the depicted objects are not parallel to the photograph anymore. But that correspondence has been reconstructed, using other strategies, such as the underlining pixel grid. In the *ma.r.s.* project he literally undermines the equivalence, emphasizing the importance of the relationship between observer and image surface. Considering the history of Ruff's oeuvre, his photographs can be considered images and not depictions and thus need no formal rapprochement such as frontality or pixel grids anymore.

Fig. 134: First photograph of Earth taken from Saturn (arrow, bottom right), published in *Libération*, July 23, 2013

Digital technologies play an essential role in this formal-aesthetic shift. The anamorphic and the red/green 3D effects represent a technical operation, which fundamentally contributes to the series, in a much more prevalent manner than in projects such as the *Häuser*. They reflect the generalization of digital retouching tools. But its implications go beyond what is technically possible: the widespread use of such editing possibilities reflects a new approach to the photographic image, where the idea of imprint is increasingly fading. The anamorphic construction of the *ma.r.s.* images conclusively rejects the idea of indexicality, rebuilding meaning with source material, cultural codification (e.g., color code) and visual references distributed through the media. The technological parameter can be considered, on a self-reflexive level, another chief interest of the series. Automation of image capture, besides image appropriation, further constitutes a distinguishing trait of Thomas Ruff digital work of the 2000s. None of his Düsseldorf colleagues have adopted similar approaches[161] engaging with news forms and uses of photography. Image production and distribution is increasingly automated and submitted to extensive meta-visual information, which completes visual data: meta-tagging conflates visual, indexical date with other types of information, which produces an extended field of photography, where the strictly visual relies increasingly on digits – in the sense that pictures are correlated with other types of numerical data. Considering that digital visual information is digitized, the possible differentiation between the visual and the meta-visual vanishes, leading to new conceptions of the photographic, such as the non-figurative *substrates* and *Zycles*.

161 Except very few cases, such as Andreas Gursky's *Oceans* series, based on satellite images.

C
THOMAS RUFF'S GENERATED PHOTOGRAPHS AND THE LIMITS OF REPRESENTATION

In the late 1990s, Thomas Ruff initiated the disembodiment of the photographic image and the deconstruction of its referentiality with the *nudes* and the *jpegs* series. Digital technologies played a paramount role in that process. Throughout the 2000s, the investigation of the medium will be carried much further, producing two series, which increasingly dissolve the two-dimensional image and radically question the nature of photographic representation: the abstract *Substrat* series and the computer-generated, non-figurative *Zycles.* In the first, Ruff has modified manga images to such an extent that only vivid color fields remain visible (Fig. 135), graphically translating its visual sources into psychedelic patterns. In the *Zycles*, he has generated algorithmic curves related to mathematical trajectories used to model planets' trajectories (Fig. 136), producing his most abstract "photographs" to date. If these series were not interpreted in the body of work of a renowned photographer associated to a documentary tradition, they would probably not even be considered photographic. While being technically different and diverging in terms of referentiality – the first uses appropriated material, the second reflects upon the mathematical formalization of astronomical movements of celestial bodies –, the key feature of these two image series lies in their abstract and thus seemingly non-referential character.

1 ICONOCLASM AND ABSTRACT PORNOGRAPHY: "SUBSTRATS"

Genesis

The *Substrat* series initiated in 2001 includes eighty-three works up to this date.[162] The photographs result from the superimposition of multiple manga images, found on the Internet, whose color values have been manipulated to achieve a painterly, abstract "psychedelic effect."[163] The outcome of an additive technique combines superimposed layers, which are submitted to digital filters, extrapolating hues, colors and shapes. According to Ruff, the process had been discovered while working on the *I.m.v.d.r.* series: while editing the interior shots of Haus Tugendhat (Czech Republic), he superimposed "two or three" shots and twisted the colors to produce an unnatural effect.[164] *h.t.b. 10*, for instance, results from the combination of *h.t.b. 05* and *h.t.b. 07*.[165] The process has been further developed in the *Substrat* series, combining numerous layers – the image of the work process reveals that Ruff experiments with at least eighteen layers – and emphasizing the vivid colors of *anime* or *hentai* imagery.[166] All photographs approximately bear the same color palette, based on red, green, violet and yellow hues, present in various graduations.[167] Even though low-resolution images are used, various smoothening filters are applied in order to hide the pixelated structure of the images, which produces an image that looks blurry or out of focus. Unlike the *jpegs*, the pixel grid or the compression algorithms are not visible in the *Substrates*.

While "manga images" are almost systematically brought up by Ruff himself or commentators, their exact nature and origin are never alluded to nor discussed.[168] Although the series has been exhibited in several major shows of the artist throughout the 2000s, the same information is retold repeatedly, without further investigation. A short documentary film on the artist reveals their origin, though. The focus on Ruff's work process shows that he has used erotic images of feminine manga characters for the series (see Fig. 137) disabling their suggestive content through superimposition and manipulation and

162 Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 98.

163 Helga Meister, "Das Bild ist schön," *K-West*, op. cit.

164 Ibid.

165 See for example Martin Søberg, "Theorizing the Image of Architecture. Thomas Ruff's Photographs of the Buildings of Mies van der Rohe," transcript of *Architectural Inquiries Conference*, Göteborg, 2008. Available at http://www.americansuburbx.com/wp-content/uploads/2012/09/Soeberg_Theorizing-the-Image-of-Architecture.pdf, accessed on June 27, 2018.

166 The terminology "manga" generically stands for Japanese comics (and by extension cartoons) and its reception in Europe in late nineteenth century is commonly associated with the circulation of Hokusai engravings. The word "hentai" is used in the West to describe erotic or pornographic mangas, although its meaning in Japanese (literally "perversion," "anomality" or "transformation") has no sexual connotation. "Anime" is the contemporary American equivalent for manga. See for example http://en.wikipedia.org/wiki/Hentai, accessed on March 14, 2018.

167 Only the edition 2009 *Substrat Blue* (four color stone lithograph, 62 × 60 cm, edition of 100) limits the color palette to blue and green hues.

168 Manga images or cartoons are for example mentioned in the interview of Thomas Ruff by Max Dax, in *Spex. Magazin für Popokultur*, reproduced in Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 72 or in Helga Meister, "Das Bild ist schön,", *K-West*, op. cit.

opposing the omnipresence of pornographic material on the web with this iconoclastic approach. Except in that documentary film produced for television,[169] the source images have hardly ever been mentioned by the historiography. Ruff or the interviewer do not specifically reflect upon the erotic character of the source either. While the systematic recourse to erotic imagery cannot be established, Ruff's didactic use of his work screen in the documentary film – the previously discussed *h.t.b. 10* is visible on the Photoshop interface behind the erotic manga character – suggests the orientation of the series he intends to disclose. By inscribing the Substrats in the continuity of the *nudes*, Ruff positions the series in his oeuvre and contributes to a coherent critical and art historical discourse.

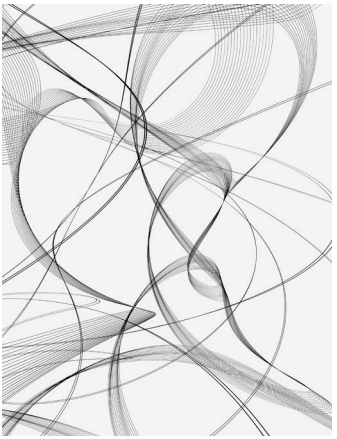

Fig. 135: Thomas Ruff, *Substrat 23 III*, 2003 (254 × 166 cm)
Fig. 136: Thomas Ruff, *Zycles 3085*, 2009 (pigment print on canvas, 266 × 206 cm)

Superimposition and visual culture

The *nudes* series addressed a whole industry: its codes, its circulation system and its categorial construction. Though explicitly pornographic, it depicted no particularly extreme practices, which probably gives insight into the pornographic material consumption of a wide majority of users. Manga imagery, although it has become popular in recent years, is rather a niche product, consumed by teenagers and associated with geek culture. The erotic character of the source images – a subcategory of manga imagery – thus corresponds to a specific, technophile, predominantly male audience, and also reflects a sub-category of the pornographic industry. But while the nudes are sexually explicit, the *Substrates* are abstractions, and even when the origin of the images is known, no visual correspondence can be found. The curves could be associated with feminine body shapes, even though a clear correspondence can hardly be stated. The breast-looking shape at the bottom of

169 *Kultur 21. Unbekannte Landschaften – Das Universum des Thomas Ruff*, documentary film, Die deutsche Welle, 2011.

Substrat 29 III probably constitutes the most explicit example of (likely extrapolated) body parts of the series. But considering its historiography – erotic imagery is hardly ever brought up by critics –, one could consider that the average viewer does not know the origin of these psychedelic tableaus. Similar to the *nudes*, Ruff addresses the meta-visual information of photographs he reflects upon. In the *nudes*, the fact that pornographic images remain sexually explicit, even in an artistic context, might explain the shift toward abstraction, in order to focus on the medium itself, photography as *substratum*. In a short text presenting the series, Valentina Sonzogni suggests a productive interpretative pattern by examining the etymology of the word "substrat." The term can refer to biochemistry; a "substrate" is a molecule transformed by a molecule. It is related to linguistics, where the "substratum" refers to an "element of language identified as being a relic of an earlier language that is now extinct." It is further used in geology, where it refers to the "layered structure" of the soil.[170] The technical layering used to produce the images and these three definitions thus point toward the idea that the *Substrates* can be seen as the outcome – but at the same time the source – of images on the web more generally, in which certain information or codes, e.g., a grammar or a shared visual culture, are contained. The interpretations of these definitions are multiple. But the idea of the perception of an image changed by other images or by the visual culture of the viewer, seems productive for understanding the image not as imprint but as vector of ever-changing meanings and interpretations, a phenomenon particularly potent in digital imaging systems where images are constantly reposted, reinterpreted and seen in other contexts.

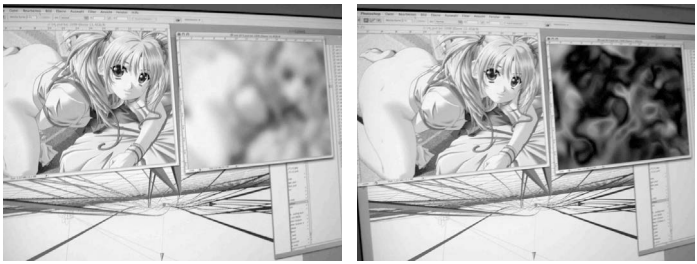

Fig. 137: Thomas Ruff, work process of *Substrat* series (pictures from Maximilian von Geymüller, *Köpfe, Kosmos, Kreise. Kontinuität im Werk von Thomas Ruf*, master thesis, University Vienna, 2009)

The project, through its blatant abstract character, deconstructs the produced meaning or any potential interpretation. In engineering, the substrate denotes "a material, which provides the surface on which something is deposited or inscribed, for example the silicon wafer used to manufacture integrated circuits." In biology, substrate refers to "the surface or material on or from which an organism lives, grows,

170 Carolyn Christov-Bakargiev (ed.), *Thomas Ruff*, op. cit., p. 98.

or obtains its nourishment."[171] Ruff addresses the surface of the image, its connotation, stripped from its content. In the recent catalogue of Ruff's retrospective show at the Haus der Kunst in Munich, the text addressing the series explains, that "Ruff noticed while searching for image material for the *nudes*, that the virtual images on the Internet essentially no longer represented reality but are merely visual stimuli conveyed by purely electronic means."[172] The coalescence of erotic imagery and "visual nothingness"[173] enhances the concept of the image as a substrate, as the latent articulation iconoclastic *versus* pornographic is neutralized: in the *Substrates*, only colors and shapes remain, leaving the image surface open to input – i.e., an identifiable reference – or output – i.e., an interpretative stance by the observer.

Thomas Ruff's first abstract work group consequently operates within a two-directional movement: technically it relies on the abstraction from a source image, combined with several layers of images and edited digitally, in order to produce psychedelic color patterns, reminiscent as much of 1970s color codes (e.g., batik fabric) as of early experiments of digital painting, in the 1980s and 1990s, whose implications were often limited to the conduct of formal experiments. On the other end, the *Substrates* address a visual architecture beneath or before the image, the layer on which it can be imprinted, as much in its technical articulation – the Internet as a substrate for a multiplicity of images – as in a more conceptual articulation – the image as a substrate to a cognitive reconstruction. If an example such as *Substrat 23 III* is juxtaposed with an erotic image – in this case, a picture from the *nudes* series (see Fig. 138) – the viewer easily reconstructs a formal correspondence. The *nude* could as much be the source image of the *Substrate* as a projection of the observer, brought about by the juxtaposition of the two examples.[174]

Through his interrogation of image distribution systems on the web and of its implications on the way images are perceived by the viewer – ultimately, highlighting their repeated transformations through their recontextualization – Ruff seemingly proves the point of post-photographic theories of the 1990s, which dreaded the potential mutability of digital photography and its consequential loss of veracity.[175] But the implied consequence of that malleable character, the manipulability of photography through its retouching, clearly did not impair its reading, or its potential truth claim. The primary outcome of the use of digital technologies in relation with photographic images, resides in their economy of distribution and their existence as multiples, and not

171 *Oxford Dictionary of English*, OSX Edition.

172 *Thomas Ruff. Works 1979 – 2011*, op. cit., p. 174

173 Ibid.

174 The confrontation of these two series coincidentally occured during a Google Image search on Thomas Ruff.

175 William J. T. Mitchell for example argued that because of its mutability, digital photography was not different from painting. See *The Reconfigured Eye. Visual Truth in the Post-Photographic Era*, op. cit., p. 7. In his retrospective study Language of New Media (2001), Lev Manovich still argues that "the mutability of digital data impairs the value of cinema recordings as documents of reality." See Lev Manovich, *The Language of New Media*, Cambridge (MA)/London, The MIT Press, 2001, p. 259.

in the visual modification *within* a single image. The photograph as substrate for various meanings prevails which, paradoxically, does not prejudice its function as a document of a depicted reality. Ruff's concealed recourse to the body in the *Substrates* further allows a comparison to be drawn with both post-photographic imagery and the conception of digital tools in the 1990s. While the "manipulative" power of such tools was displayed at that time through the manipulation of the body, the invisibility of the (hidden) bodies of the *Substrate* series stresses the importance of the cultural reading of an image, which comes from the viewer, against its perception as an (indexical) depiction.

Fig. 138: Thomas Ruff, *nude ft04*, 2000 and *Substrat 23 III*, 2003

2 FROM ENHANCED TO GENERATED REALITIES: THOMAS RUFF'S "*ZYCLES*"

The movement between the figurative and the abstract, which operates at the limits of photographic representation, will be pushed even further by Ruff with his forthcoming non-figurative series *Zycles*, which crosses a conceptual and technical line in the conception of photographic representation. Using manga images – technically drawings – as the source of the *Substrates*, Ruff emphasized the fact that he focused on images, rather than on a physical reality. While he used visual sources for the series, their chirographic nature already questioned the need for indexical photographic material to produce photographic work. The *Zycles* not only generate images without a visual source or indexical information – the series materializes mathematical formulae – but concomitantly rejects the reliance on any strictly photographic technical apparatus, a symptom of the increasing convergence between photographic capture, film capture, image post-production and CGI.[176]

176 Computer-generated imagery.

Scientific models and taxonomic classification

The *Zycles* series, printed on canvas by an inkjet printer, spans from 2008 to 2009. It is considered ongoing by several publications and galleries, but no photograph has been produced since that two-year span. Its historiography commonly associates it with Ruff's account of his interest for old books on electromagnetism,[177] in particular Scottish theoretical physicist and mathematician James Clerk Maxwell's reference works *A Dynamical Theory of the Electromagnetic Field* (1865) and *A Treatise on Electricity and Magnetism* (1873).[178] Maxwell is credited with two major innovations: the visual formalization of magnetic fields and the use of color photography, the outcome of his research on color perception. While visually inspired by Maxwell's etchings of electromagnetic fields (see Fig. 139), the series is mathematically based on the cycloid – from which Ruff's series draws its title –, a specific type of curve used to describe movement of planets in an (outdated) model of spheres used to represent the solar system.[179] But it draws conceptually from Maxwell, as Ruff was interested by the resonance created by images as models, which "have no reality in the real world."[180] While these modeled etchings correspond to *a* reality, that reality – such as the trajectory of a planet – is not visible in itself. However, if those realities are *per se* distinctive in a philosophical realist perspective,[181] historians of the scientific discourse have shown that they were not necessarily considered completely dissimilar. As Lorraine Daston and Peter Galison pointed out, "it is structures like Maxwell's equation, not theoretical entities like the electromagnetic ether, that constitutes scientific reality."[182] Although the authors clearly inscribe such a structural realist position into science's claim to objectivity,[183] it nevertheless informs about discursive forms or schemata of representations of reality, historically constructed, which are clearly relevant to Ruff's approach.

177 E.g., *Thomas Ruff. Works 1979 – 2011*, op. cit., p. 226 or Melanie Bono, "Stellar Landscapes," in *Thomas Ruff. Stellar Landscapes*, op. cit., p. 52 – 53. For the most extensive study of the *Zycles* and their relationship with nineteenth-century scientific discourse to date, see Douglas Fogle, "Dark Matter," in *Thomas Ruff. Oberflächen, Tiefen – Surfaces, Depths*, op. cit., especially p. 194 – 200.

178 James Clerk Maxwell, *A Treatise on Electricity and Magnetism*, Oxford, Clarendon Press, 1873.

179 Melanie Bono, "Stellar Landscapes," in *Thomas Ruff. Stellar Landscapes*, op. cit., p. 52.

180 Interview of Thomas Ruff by Gerald Matt, in *Thomas Ruff. Oberflächen, Tiefen – Surfaces, Depths*, op.cit., p. 241 – 242, quoted by Melanie Bono, "Stellar Landscapes," in *Thomas Ruff. Stellar Landscapes*, op. cit., p. 52.

181 Leibniz was first to postulate that science, or more specifically mathematics, could not describe reality. While science is able to produce models that correspond to reality, the multitude of alternative models – which would represent alternative realities – and the lack of defined relationality between reality and model prohibits the production of any definitive knowledge about reality. See for example Michel Serres, *Le système de Leibniz et ses modèles mathématiques,* Paris, Presses universitaires de France, 1968 (The author would like to thank Marc-André Weber, philosopher, for his insight concerning scientific epistemologies).

182 Lorraine Daston and Peter Galison, *Objectivity*, op. cit., chapter "Objectivity without Images," p. 253 – 262. Quote p. 261.

183 Ibid.

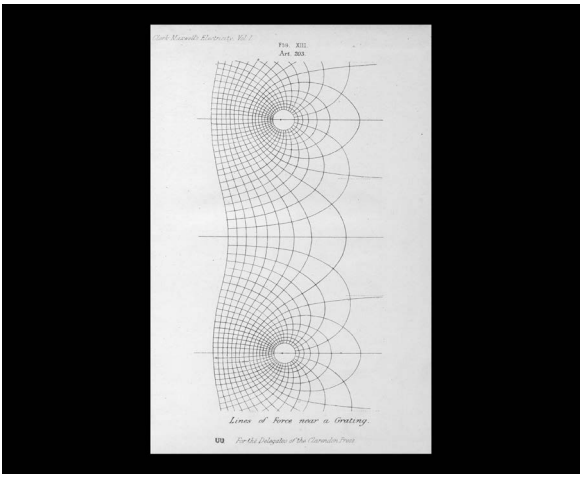

Fig. 139: James Clerk Maxwell, *A Treatise on Electricity and Magnetism,* Vol. 1, Oxford, Clarendon Press, 1873: *Lines of Force near a Grating* (fig. VIII, Art. 203)

The *Zycles*, unlike previous series by Ruff, solely rely on digital technologies, as no trace – even residual – of captured images constitutes the final photograph. Technically, Ruff has extruded 3D models from these two-dimensional images with a very common 3D modeling program, Maxxon's Cinema 4D.[184] With the software, primarily used for product design, architectural renderings or animation, Ruff produces a three-dimensional mesh of spline curves, which suggest volume and perspective. Such vector drawing integrates mathematical data, which allows generating and modifying a curve according to pre-set values, a result that couldn't be drawn manually. The result could be compared to ballistic curbs, modulated according to certain values, in that case gravity. If Ruff's models do not correspond to any physical reality such as an electromagnetic field, they nevertheless are submitted – to a certain extent – to mathematical laws, whose execution is automated by the software. 3D modeling software integrates numerous mathematical and physical parameters, which simulate the behavior of an object in real life, such as gravity. More elaborate software such as Autodesk's 3DS Max even calculates the "real" lighting conditions according to geographical data, daytime and time of the year.[185]

Formally, there are four sub-series in the *Zycles*, according to used colors, formats and types of curves. An important amount of the 2008 images combine black, green, yellow and red curves on a white background, using rectangular image formats. A few square formats, mostly realized in 2009, are bi-chromatic. They use only one plain color (yellow, violet, black) on black or white background (e.g., *Zycles 6024*). These sub-series can further be classified according to the two types of drawn lines: while examples such as *Zycles 6024* or

184 See interview of Thomas Ruff by Gabriele Naia, "Thomas beyond the Surface," op. cit.
185 Luminosity, light intensity, angle of sun rays, etc.

Zycles 7044 predominantly use single lines,[186] the other set combines single lines with aggregates of ten to twenty parallel lines (e.g., *Zycles 3061*), whose shapes are more overtly reminiscent of Maxwell's etchings (see Fig. 139) – and thus reflect more explicitly scientific imagery. Even though the series is based on the concept of cycloid, a specific type of curves, Ruff has also experimented with straight lines articulated by angles, which thus calls to mind fractal structures rather than curves. If the two-year span is too short to allow a systematic analysis, it can still be advocated that 2008 images are rather polychromatic, rectangular, with single and multiple curves, while 2009 photographs rather use square image formats, bi-chromatic patterns and single lines only, three characteristics which appeared in 2009. Initial inspiration of the Maxwell models seems to be somehow fading in 2009, the visual concept autonomizing itself gradually.

	30xx (70xx)	40xx	60xx	80xx
2008	●			
2009	●	●	●	●
Rectangle	●		●	●
Square		●	●	
Monochromatic Lines	●	●	●	
Polychromatic Lines	●			●
Single Lines	●		●	
Multiple Lines	●	●		
Angular Lines				●
Black Background		●		
White Background	●		●	●

Fig. 140: Typology of titles in *Zycles* series

These various formal features are interestingly reflected in the four-digit title typology, as shown in the figure above: the work groups are defined by a certain number of variables – date (2008 or 2009), image format (rectangle or square), color of lines (only single color or multiple colors), types of lines (single, multiple or angular) and background (black or white) – whose expression is reflected in the titles. The first two digits of the 30xx, 40xx, 60xx and 80xx sub-series, inform about the formal construction. The second two-digit part of the title uses numbers ranging from one to ninety-nine, identifying each photograph. The same digit is never used twice (i.e., *Zycles 3099* and *Zycles 4099*). It evolves chronologically in the four sub-series, which gives a maximum of one hundred possible photographs; twenty-five could be identified (see Fig. 141).

186 *Zycles 7044*, 2008 is displayed on the website of one of Ruff's three galleries (Mai 36, Zurich) and in the catalogue of the 2013 Haus der Kunst, Munich exhibition. It corresponds in all points to the 30xx series, but is the only example of title not fitting into the overall typology. *Thomas Ruff. Works 1979 – 2011*, op. cit., p. 226–237.

	2008	2009
3000 series (7000)	3041, 3042, 3045, 3048, 3050, 3052, 3054, 3060, 3061, 3065, 7044	3075, 3078, 3080, 3085, 3090
4000 series		4020, 4070, 4078, 4072, 4080
6000 series		6021, 6024, 6033
8000 series		8022

Fig. 141: List of works of *Zycles* series by date

Ruff's title methodology as such doesn't inform much about the series, but it exposes a very systematic methodology, which can be associated to scientific taxonomies. Its four-digit title system calls to mind Jörg Sasse's *Speicher I* (also 2008) although he generates them digitally with algorithms, while Ruff coins them according to certain pre-set criteria. The various categories of color schemes and curve types produce Ruff's most "mathematical" series, although the concept of a sub-categorization based on formal criteria can be found in earlier works: the *Sterne* series (1989 – 1992) uses a complex taxonomy – reproduced by Matthias Winzen in Ruff's 2001 monograph[187] – dividing the series into six categories, according to the type of celestial bodies visible in the photograph:

1 Record of foreground stars with normal stellar density in the background
2 Record of foreground stars with higher stellar density in the background
3 Record of foreground stars with other galaxies
4 Record of very remote stars
5 Record of stars with interstellar objects and nebulae
6 Record of the Milky Way with high stellar density

The photographs of the same category are not as easily recognizable as the *Zycles*. However, Ruff clearly applies similar taxonomic strategies; the titles of the *Sterne* use stellar coordinates,[188] which further reflects Ruff's systematic classification endeavor. Although his work is rather uncommonly associated with the Bechers' typological experiments – Ruff does not compare physical objects in the real world – it clearly contains an underlying pattern categorizing visual aspects in the image, which becomes even more clear with the *Zycles*. The *Sterne* categorization corresponds to a certain extent to a physical reality, or the description of what is shown on the photograph. The *Zycles* on the other hand, in which the categories are not explicit, classifies formal features, analyzing the image itself. The classification grid becomes a central feature of the series, an aspect which plays a central role in the

187 Matthias Winzen (ed.), *Thomas Ruff, Fotografien 1979–heute*, op. cit., p. 191.
188 The "stellar equivalent" to longitude and latitude. See skyview.gsfc.nasa.gov, accessed on June 26, 2018.

jpegs as well. In this case, the image typology itself becomes the object of the series, while in the *jpegs* a referent remains.

Fig. 142: Cory Arcangel, *Photoshop CS: 84 by 66 inches, 300 DPI, RGB, square pixels, default gradient, «Blue, Red, Yellow» (turn reverse off), mousedown x=4000 y=5350, mouse up x=20000 y=1200*, 2011 (212.7 × 141 cm)

Objectivity and abstraction

Besides its aesthetic features, the *Zycles* chiefly addresses two specific epistemological questions, merging in their formal expression: the series reflects upon Ruff's interest for the history of images in scientific thought and examines contemporary concerns addressing the limits of photographic representation. To which extent can generated 2D and 3D models still be considered photographic, and which parameters ought to be considered to sketch out an answer to such question? In order to highlight the importance of a contextual reading of such projects, a comparative example using similar technologies might be revealing. Cory Arcangel's image (see Fig. 142), the outcome of a single mouse stroke in Photoshop – the values defining the image are pre-determined (and reflected in the title of the work) –, is not considered a photograph. But it is less for technical reasons than for its contextual and institutional inscription: even though the status of the *Zycles* is interrogated by Ruff's historiography, because of the series' technical origin and its materiality (pigment print on canvas), he is commonly considered a photographer. Arcangel's background is based on mainstream Internet and digital culture – he appropriates game consoles or YouTube videos –, so his digital image is not perceived as a photograph. Yet Ruff's use of canvas instead of the common Diasec c-prints indicates that he clearly aims at re- or de-contextualizing his images from a specific photographic context. There is no technical reason to produce an inkjet print on canvas rather than on a c-print. But at this point, an assessment of the "photographic" nature of these images remains outstanding. The three-dimensional construction also plays a central role in the series. The

digitally generated images, which are most likely accepted – or mistaken – for photography, are hyperrealist architectural renderings, because they reconstruct the concept of the camera obscura. The image is "taken" from a set point of view, which simulates photography's transparency, which its claim for veracity or objectivity has been derived from. If on a conceptual level the *Substrates* and Ruff's oeuvre address two-dimensional images and their architecture, the *Zycles* paradoxically reconstruct a 3D space in order to re-evaluate photography through its original defining feature: the equivalence between the three-dimensionality of the physical space and the modeling in a 2D image of that 3D space. With that radical rapprochement, Ruff emphasizes the fact that photographic capture – despite the idea of imprint or the supposed acheiropoietic nature of the medium – might be a sheer modelization.

Fig. 143: Cover of Herbert W. Franke and Gottfried Jäger, *Apparative Kunst*, 1973

This particular stance appears in Ruff's *Photograms* (2012 – 2014) series,[189] inspired by two Art Siegel photograms of his private collection. The computer-generated images reinterpret the famous art historical model, using 3D software to recreate a virtual studio setup with paper, objects and camera.[190] Such experimental proceedings echo as much epistemological concerns addressing the histories of (mechanical) representation as philosophical interrogations discussing the possible relationships between reality and its visual formalization, providing numerous leads for the interpretation of Ruff's oeuvre in doubtlessly forthcoming historical studies.

189 See Michael Famighetti, "Thomas Ruff. Photograms for the New Age," *Aperture*, Summer 2013, p. 84.
190 Ibid.

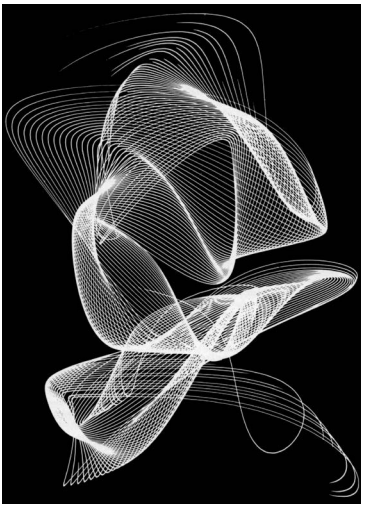

Fig. 144: Illustration of *Apparative Kunst* (Peter Keetman, *Schwingungsfigur* 995, 1949), p. 38

An alternative genealogy

The *Zycles* series, based on curves generated by a computer program, is commonly interpreted in relationship with Maxwell's visual models of electromagnetic fields. The connection with the history of scientific imagery seems legitimate, but the confrontation with another model proves productive, particularly if considering its circulation. Generated visualizations based on mathematical models show evident formal and conceptual meetings point with Ruff's series. Peter Keetman's *Schwingungsfigur*, for example, created in 1949, constitutes the photographic predecessor of Thomas Ruff's *Zycles* (Fig. 136) and suggests yet another photohistorical relationship with photographic representation. Keetman's illustrations are images of revolving light sources, embodying the movement of Lissajou's curves, described for the first time by French physicist Jules Lissajous (1822 – 1880). To create his images, he attaches light sources to an oscillating metal rod strapped to a moving gramophone and captures the resulting curves with a conventional camera.[191] Ruff's and Keetman's "generated" images are formally and conceptually similar: both address the visualization of mathematical formulas in order to create abstract, visually interesting images. But more than the connection between both photographers or sets of images, it is a specific context in which Keetman's work was displayed that is interesting in regard to the genealogy of digital generative processes. His project is featured in one of the earliest publications on digital art in Germany, *Apparative Kunst*, published in 1973 by Gottfried Jäger and Herbert W. Franke (Fig. 143).

191 See Herbert W. Franke and Gottfried Jäger, *Apparative Kunst: Vom Kaleidoskop zum Computer*, op. cit.

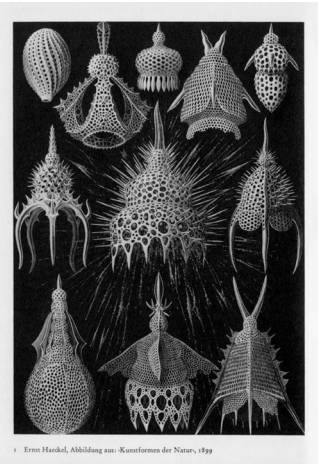

Fig. 145: Illustration of *Apparative Kunst* (Ernst Haeckel, *Kunstformen der Natur*, 1899), p. 18

Jäger, key artist-theorist of the "*generative Fotografie*," a movement of abstract photography focusing primarily on mechanical or chemical generation processes,[192] co-signed the book with Franke, a physicist, science-fiction writer and early digital artist. The book surveys various historical models of science, photography and the intersection of both (e.g., Muybridge, Marey, etc.), in order to establish the process computer-generated art might be based upon. Its search for formal models in nature for example, exemplified through Ernst Haeckel's *Kunstformen der Natur* (1899, e.g., Fig. 145), is reminiscent of Karl Blossfeldt's Urformen der Kunst (1929). What could be called the *Urformen der Computer Kunst* in the context of a publication of the sources of generative processes ironically connects the history of computing with the history of Düsseldorf. But above strictly contextual connections or common references, more concrete examples show a proximity between Düsseldorf and computer art in the German context, on a formal and aesthetic level.

192 The main protagonists of the "*generative Fotografie*" besides Jäger are Hein Gravenhorst, Kilian Breier and the Belgian artist Pierre Cordier, who exhibited together at the Kunsthaus Bielefeld in 1968. See especially Anaïs Feyeux, "La *Generative Fotografie*. Entre démon de l'exactitude et rage de l'histoire," *op. cit.* and *Generative Fotografie*, exhibition catalogue, Bielefeld, Städtisches Kunsthaus, 1968.

D GENERIC PICTURE REALITIES

1 SINGLE IMAGE TYPOLOGY

The formal construction of most Düsseldorf photography primarily derives from the Becher protocol, which by definition constitutes a codification system formulated to depict reality. The first step of its application thus yields an image, which geometrically matches that reality, as most photographs are taken frontally. How does the autonomization of single images in the context of their typological confrontation affect that codification? The various strategies addressing photographic depiction and representation in the 1960s and 1970s suggests a shift, defined by an increasing awareness of the photographic apparatus and the technical (but also cultural) codification of mechanical representation systems. That awareness, highlighted by various strategies – the typological construction being one of them – increasingly acknowledges photographs [Abbilder] as autonomous images [Bilder], which become subject and object of the depiction. Without needing to inscribe this shift in a theoretical framework addressing broader implications (e.g., pictorial turn, iconic turn, etc.), the analysis of Düsseldorf photography in the context of these strategies and their explicit formal filiation with the Bechers and their ascendency from implicit models such as Richter or LeWitt, shows an important reconfiguration of photographic depiction: images become the main subject of photographic representation. Self-evident in Jan Dibbets' perspective drawings or Victor Burgin's *Photopath*, the understanding of that claim only appears overtly in Düsseldorf photography

in specific series, when the material structure of the image appears, as in Thomas Ruff's *jpegs*. It is less evident if one considers Candida Höfer's libraries or Andreas Gursky's skyscrapers, which could still be comprehended as "transparent" depictions of reality.

Various tactics inscribe Thomas Ruff's, Andreas Gursky's and Jörg Sasse's work within an inquisitive approach to visual culture and the circulation of images. Most images physically exist as single entities, rather than as serial constructions or displays. As such, their relationality with the image of a collective memory could be defined by the concept of single image typology. This strategy is most obvious and most explicitly formulated in Thomas Ruff's work. His *nudes* and *jpeg* series, through the complex categorization system they are subjected to, confront every image with a pre-existing reference, to pornographic and media imagery respectively. The photographs are associated with a more or less explicit category by the viewer, as their generic character expresses a variety of images, rather than a specific moment in time or space. The decontextualization – similar to the Bechers' typologies, whose components appear as type-images rather than depictions – enhances the generic reading of the photograph, which the viewer associates with familiar imagery (e.g., photographs of the 9/11 attacks) or with well-known image categories (e.g., "historical images" or "orgy"). Similar to Jörg Sasse's *Speicher*, every photograph is defined by shared knowledge, an interpretative grid it is subjected to. The consequence of such comparative schemata, present as much in Andreas Gursky's photographs of the globalized world as in Jörg Sasse's investigation of vernacular photography, is the constitution of a single-image typology: although most Düsseldorf tableaus are conceived and displayed as autonomous units, they always interact with a more or less explicit visual equivalent, a multiple image system they are connected to.

The first decade of use of digital technologies in the photography of the Düsseldorf School has primarily focused on the autonomization process set forth through the Bechers' typologies. Its explorative underscore concentrates on various parameters of the single image – formats, image composition, verisimilitude or documentary discourse. Andreas Gursky's work of that period can be interpreted as a shift toward two-dimensional compositions, in a first step achieved through modified camera angles, and in a second step through digital manipulations. But although Jörg Sasse's early exploration of recycled imagery and a culturally defined grammar of the photographic image, his experiments revolve around the single image. But in the second half of the 1990s, the digital becomes much more than a compositional tool, participating in a wide-ranging interrogation of the single image in the context of a shared visual culture. The use of classification systems and the transformation of specific photographs into type images through compositional processes (Gursky de-specifies his photographs through reductive transformations – for example, by limiting color range) or more experimental and self-reflexive strategies (Jörg Sasse's *Speicher* implicitly builds a metaphorical image database) eventually inscribe the visual production in a system, shifting the focus

from single image to single image typology. The typological classifications the single images are ascribed to are most evident in Thomas Ruff's *nudes* series. Every image corresponds to a defined category (or several, for instance), used by the whole pornographic industry and recognizable by the viewer. In his *jpegs*, the process is less explicit. Even if Ruff formulated a precise number of categories, a single photograph cannot necessarily or logically be identified. In the non-figurative *Zycles*, the categorization system is based on the formal parameters of the image itself: image shape (square or rectangular), background color (black or white) or line types (single lines or multiple lines). Mostly based on binary values, the series seems to explicitly address its categorial construction – and incidentally build a typological system within that particular series, while the *jpegs* address images available on the web. The strictly mathematical model of the *Zycles*, in which comparative mechanisms and generative processes using digital technologies converge, interestingly echoes anterior processual strategies, hardly ever evoked to apprehend Düsseldorf photography.

2 IMAGES AND GRIDS

An often-quoted aspect of the Bechers' teaching, as much by their students themselves as within the historiography of the Düsseldorf School,[193] mentions the insistence of Bernd Becher on defining one particular theme in a career as a photographer and pursuing it systematically. Candida Höfer depicts libraries or places connected with wisdom or power, Thomas Struth increasingly focuses on museum interiors and Petra Wunderlich on architecture. How can the work of Ruff, Gursky or Sasse be interpreted in that respect? An important aspect is that they designate their images *as* images, in a much more unequivocal manner than the artists who do not use digital technologies. In the 2000s, Ruff and Sasse created numerous projects and series in which the status of the image itself is addressed. Only their work makes explicitly visible the image surface through various strategies. If Ruff's *Porträts* have been interpreted as "surfaces," self-reflexive objects that possess no "depth,"[194] that particular aspect only becomes visible in the late 1990s through the display of pixels, blown up to considerable sizes in his large-format *jpegs*. Visible pixels also appear in Sasse's work in the mid-1990s, but numerous other visualization strategies of the image surface (digital filters, lens flare, visible chemical processes, etc.) and the materialization of photographs (as framed physical objects) and their symbolical dematerialization (as files in a digital databank) in his database projects pursue that self-reflexive strategy – photography in visual culture as a repeatedly interrogated object. Andreas Gursky retains a specific theme throughout the 2000s

193 See for example Matthias Winzen, "A Credible Invention of Reality," op. cit., p. 171.

194 See for example Cathérine Hug, "Surfaces, Depths," in *Thomas Ruff. Oberflächen, Tiefen – Surfaces, Depths*, op. cit., p. 48 ff.

and mostly depicts the manifestations of globalization, and his work is often read accordingly (e.g., globalized markets in Fig. 146). As such, his imagery seemingly pursues similar goals to Candida Höfer or Thomas Struth. Yet, his iconic picture world clearly derives from a *formal* confrontation with these subjects, rather than from an aestheticized documentary approach, addressing similar issues to his fellow Düsseldorf photographers.

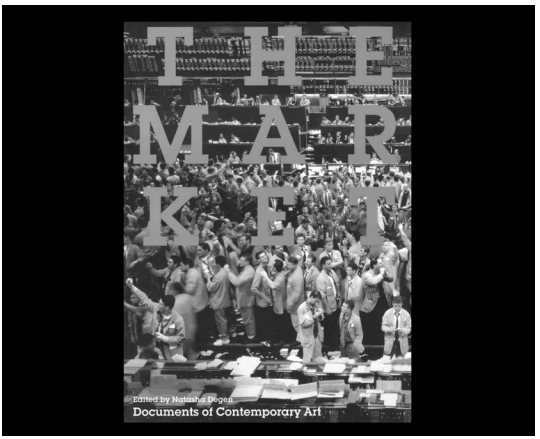

Fig. 146: Andreas Gursky, *Chicago Mercantile Exchange* (1997) used as cover of Natasha Degen, *The Market*, Documents of Contemporary Art, Cambridge (MA), MIT Press, 2013

As the study of the period between 1989 and 1998 has shown, the emergence of digital tools in Düsseldorf photography approaches the photographed objects mathematically and orthogonally, arranging the depicted realities to correspond to a certain extent to the orthogonal model of the Bechers. Snapped to a structuring grid, the images acquire a certain autonomy, which results from the deconstruction of the relationship between a physical object and the photograph. In the period of the generalization of digital technologies, that "bond" is definitely discarded to focus on the economy of images in a new visual environment, in which distribution, classification and perception by a specific viewer becomes increasingly important. A clear symptom of the fact that these strategies address the visual architecture as a system rather than its particular outcome, resides in the various de-specifying strategies that Ruff, Sasse and Gursky apply. If all three produce generic images, they proceed very differently. Gursky primarily operates visually, applying compositional strategies, which de-specify the image, either by homogenizing a particular photograph or by reconstructing a visually pregnant composite, echoing the viewer's preconception of a particular topic. Ruff primarily interrogates the photographic apparatus itself. He addresses the methods of classification of photographs (on the web, in a scientific context, etc.) and their visual archaeology (reflecting upon the history of the photographic image and the photographic devices), and he explores their specific visual character and the relationship between a viewer and

the generic images he produces. Sasse's work also interrogates the grammar of photographs, aiming at understanding their cultural connotation, but it extends that questioning to the architecture of the image in a digital context. Although dissimilar in many regards, all three artists have in common a self-reflexive interrogation of a generic, autonomous image freed from its bilateral relationship with a referent, focusing on the overall architecture of imaging systems, considering an image in its broad cultural context. If it ought to be established to which extent "conventional" analogic photographic practices such as Thomas Struth's also address visual economies rather than a physical reality, the evaluation of the work of Ruff, Gursky and Sasse clearly highlights the fact that in *their* strategies, digital technologies play a central role, both as tools to produce their bodies of work and as a theoretical framework to think and formulate the implications of the (mostly) mainstream imageries they are referring to. Although neutrino detectors, Prada shops and Mars images might not seem reminiscent of the preoccupations of the everyday image consumer, they nevertheless reflect the equivalence of all images in an increasingly globalized, standardized and commodified visual economy.

3 ASSOCIATION WITH POST-PHOTOGRAPHY

The overt association of the work of Andreas Gursky, Thomas Ruff and Jörg Sasse with digital technologies has also produced a re-evaluation of their art historical inscription and categorization. In some projects, the idea of post-photography prevails. Thomas Ruff's digital work with the human body, for example – primarily through the *nudes* series –, has led some curators and scholars to read his production in resonance with post-photography. While in the early 1990s post-photography and German documentary photography seemed to develop distinct historiographies, only crossing sporadically, the coalescence of the representations of the human body and the use of digital technologies provided a new interpretative model for Ruff's production. Some scholars have imagined a rebirth of photography, presupposing that the medium had "died."[195] Their projects thus derive conceptually from the post-photographic debate, mostly approaching the representation of the body but sometimes also addressing digital retouching. The predominant stance, though, neither claims the end of photography nor disregards the importance of the digital. Rather, it highlights the fact that – as Matthew Biro argues – "it is important not to overemphasize the division between analogue and digital photography. As suggested by the long history of photomontage in the nineteenth and twentieth centuries, analogue photographs have always had the power to manipulate and transform reality."[196] Bernd

195 Jonathan Lipkin, *Photography Reborn. Image Making in the Digital Era*, New York, Harry N. Abrams, 2005.

196 Matthew Biro, "From Analogue to Digital Photography. Bernd and Hilla Becher and Andreas Gursky," op. cit., p. 366.

Stiegler goes even further in that respect, arguing that the autonomization of the photograph, through the supposed loss of the indexical link with the referent, brings forth the acknowledgement that every connection [Bezug] with reality is a construction. As such, he interprets digital photography, "which makes explicit that it *is* a construct," as symptomatic of a new paradigm aiming at deconstructing the omnipresent "myth of the real."[197] Ironically, the "visual truth in the post-photographic era," whose loss W. J. Mitchell feared in 1991, seems at last to be based upon much more pragmatic parameters (e.g., the viewer, the context, etc.), and the image as signifier of the world, rather than imprint, definitively accepted.

The emergence of digital technologies in the late 1980s and early 1990s, in Düsseldorf photography, were primarily focused on single-image constructions, which incorporated comparative mechanisms inherited from the Bechers *within* individual images. They were at that point used as simple tools, either to retouch images or to create digital composites. In these positions, the "folklore of photographic truth" is discarded,[198] although in some cases (i.e., Andreas Gursky), a documentary ambition remains. Both Ruff and Gursky's series were inscribed in a documentary rhetoric at the time, the tools being either ignored, or praised for their ability to enhance the depicting of reality. In the phase of generalization of the digital in Düsseldorf, an increased inscription of images into digital imaging systems has replaced the simple tool. The mechanisms structuring the images of the early phase are re-deployed outside of them. Through various strategies, Ruff, Gursky and Sasse confront their images with external imageries. Andreas Gursky's increasingly generic depiction of the globalized world operates through the confrontation of various symptoms of globalization, which are identical all over the planet (e.g., Nike sneakers or Prada stores), and their existence through image circulation systems (e.g., global advertising). If his tableaus physically remain autonomous objects, their content triggers a permanent dialogue with shared cultural references. While the Bechers' typological system is auto-referential and enclosed in each series – the comparative mechanisms only articulate the nine, twelve or sixteen images of a discrete typology –, the use of such processes by their students virtually expands to the entire global visual culture. Post-photographic imagery could in that respect be interpreted as embodying an intermediary position in which the references span from historical representations of the body to the visual symptoms of the cultural construction of beauty in the 1990s. But, as such, it could also be understood as a response to the increasingly significant epistemological status of images altogether.

197 Bernd Stiegler, *Theoriegeschichte der Photographie* (Bild und Text), op. cit., p. 422.
198 Allan Sekula, "Documentary and Corporate Violence," op. cit., p. 360.

PART 5

CONCLUSION
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Anonyme Skulpturen, anonyme Bilder

In 1991, Enno Kaufhold programmatically noted in a special issue of *Aperture* on "New German Photography" that "cinema and especially TV have taken over the task of recording reality from photography. In the coldly calculated pictures of Struth, Gursky, and Ruff, as well as in the staged pictures of Förg and Prinz, reality appears again, in an elevated, aesthetic form."[1] Although taken out of context, the quote stresses two points, central to our research, whose implications we shall summarize briefly. Firstly, it emphasizes the fact that documentation derives from a primarily aesthetic position, an allegedly new stance, if compared with the origins of the Becher protocol. Secondly, it insists on the calculated dimension of Düsseldorf photography, which in the work of Ruff, Gursky and Sasse can be taken in a literal sense: most of their images are computed digitally, and thus mathematically, which shows the proximity between an artistic position – Düsseldorf photography's tendency to construct every image meticulously, controlling every aspect of it – and the digital tools used.

The study of digital technologies in use at the Düsseldorf School has shown, primarily through the study of the specific discourse connected with the digital and through the evaluation of the overtness of its technical limitations (e.g., pixel structure), that these technologies operate as markers of a reconfiguration of photographic depiction, the outcome of which is addressed by numerous artists using photography in the 1960s. The main consequence of this new perspective toward the production of photographic images can be formulated in a very simple way: while photographic representation has primarily been preoccupied with the ability of the medium to depict – and could thus be interpreted as a formalization of the physical reality –, the two-dimensional photographs will increasingly be acknowledged and interrogated as autonomous images. That particular shift occurred in the typological work of Bernd and Hilla Bechers, whose protocoled depiction considerably influenced their students. The protocol has had an important impact on Düsseldorf photography on a strictly formal level but as such also plays a significant role as vector of discourse addressing documentary practices. More than the depictive capacities of the photographic apparatus, used in the context of strictly defined rules, it is the documentary position it embodies that ought to be predominately evaluated. The Bechers' original pursuit of an objective depiction of reality translates in the work of the young generation into the aestheticized "depiction" of images using a documentary protocol rather than the depiction of the physical world. The Bechers' depiction of "anonymous architecture," which had been increasingly interpreted as "anonymous sculptures" in the late 1960s, could be seen as "anonymous images" in the work of their students.

While the formulation might sound trite, it has to be stressed that Thomas Ruff, Andreas Gursky and Jörg Sasse – and it will have to be established to which extent other students of the Bechers can be linked to that claim – are primarily concerned with the depiction

1 Enno Kaufhold, "The Mask of Opticality," op. cit., p. 68.

and the reproduction of images. A multitude of definitions of what a documentary stance may be, of which technologies or positions allowed a "truthful" or "objective" representation, have over time been given and pursued, leading to an extremely controversial debate as to whether any documentary form would be more legitimate than another one. If the documentary style, the transparency its discourses advocated and "the belief in the readability of the images" *by themselves* has been questioned in the 1940s already,[2] its reappearance in the 1960s, concomitant with the institutionalization of photography *and* a radical reorganization of photographic depiction, seems – on several layers – paradoxical.

Through the legitimation process of German documentary forms in the 1970s, Düsseldorf photography emerged in a context in which its very existence as an art form was no longer questioned. But in that process, it lost its role to a certain degree, as many documentary models they were associated with only existed in the context of specific documentary or archival projects. The liberty of the young generation of Düsseldorf photography has consequently also caused instability: Does their strictly artistic endeavor allow their association with documentary forms *outside* the documentary style? Is the quest to "depict things as they are," which constitutes a discursive precondition of several historical models, still a necessity of their work? Very generally, it could be argued that the depiction of the *images* pretending to show the things as they are has become central in the work of Düsseldorf photography. The documentary claim, although not explicit, resides in the confrontation of images with the knowledge the viewer already has of them. The focus shifts from the objectivist paradigm, in which practices and discourse on the relationship between the physical object and its depiction remain central and in which the aspiration for transparency prevails, to new documentary forms, addressing the confrontation of the image itself with the spectator. As the analogy with Thomas Demand's photographed cardboard models, reflecting media imagery and its associated knowledge shows, reality is not "behind" the picture, but in front of it. What Nora Alter calls "visibility" (after Heidegger's concept *Umsicht*)[3] can be seen as an increasingly important precondition of the contemporary scopic regime, taking into account "the world round-about us"[4] and extending vision itself ("sight as a physical operation") and visuality ("sight as a social fact").

This research further highlights historiographical questions that the study of digital technologies – an angle never before extensively pursued – has opened up. The fact that digital technologies used in photography were considered with suspicion, as the post-photographic debate has shown, but that they were interpreted according

2 Olivier Lugon, *Le style documentaire. D'August Sander à Walker Evans, 1920 – 1945*, op. cit., p. 365.

3 Nora Alter, "The Political Im/Perceptible in the Essay Films: Farocki's 'Images of the World and Inscription of War,'" *New German Critique*, No. 68, Spring-Summer 1996, p. 166 – 168.

4 Magda King, *A Guide to Heidegger's Being and Time*, Albany, State University of New York Press, 2001, p. 68 – 70.

to another prism in the Düsseldorf context, shows the strength and resilience of the documentary paradigm established in the 1970s. But it also reveals a certain position toward new technologies. As much in the early experiments in the 1960s and 1970s as in the 1990s, the digital is considered suspect or soulless. Sol LeWitt's open cubes and Manfred Mohr's equivalents are both processual forms, with an almost identical formal result. If the conceptual inscription of LeWitt's work obviously conflicts with Mohr's explicitly aesthetic and visual stance, it is ultimately the fact that the latter work was produced by a computer that discards these cultural forms. In the Düsseldorf context, the reception of digital technologies in the early phase of their use was either ignored or interpreted as a sheer tool that was subordinated to the artists' strategies. In Sasse's case, it was associated with formal experiments. And when digital visual culture became the subject of their work in the late 1990s, suspicions toward the new medium had vanished, and the digital parameter was not reflected upon either – except when it was visible and overt, as in Ruff's *jpegs*.

A third conclusion of this research lies in the uncovering of a rather sporadically mentioned component of the work of Sasse, Gursky and Ruff through its connection with conceptual art. The effect of a reorganization of photographic depiction in Düsseldorf photography, whose origins and implications we aimed to trace, was achieved through the evaluation of the Becher protocol, which allowed us to draw a formal and conceptual correspondence between the 1970s and Düsseldorf. The interrelations between the set of rules defining the Bechers' photographic body of work with the role played by digital technologies – as much on a formal as on a discursive level – has allowed an apprehension of the work of their students. The study of the early phase of the use of digital technologies has shown that all three photographers adopted an underlying grid structure and combinatory or serial mechanisms within single images. These "fundamental" mechanisms, inherited from conceptual art and mediated through the Bechers, innervated individual strategies and supplemented specific formal transformations. The panorama emerges in Andreas Gursky and Thomas Ruff's work before digital technologies were used, as implicit confrontation with grid structures and single image typologies: the generative and confrontational mechanisms in their images were extended through format variations, with an ensuing immersive character, consistently interpreted as an extension of documentary "value." The reception and interpretation of Andreas Gursky's panoramas of the 1990s thus legitimizes the concept of super-documentary, considering the numerous factors that enforce its depictive or informative claim. These formal transformations mark a shift toward generic forms with increasing image formats and a concomitant "reduction" of the specific information an image conveys. As such, these strategies can be interpreted as a new step in documentary forms. The documentary style has throughout the twentieth century claimed a documentary value by emulating the formal construction of a certain type of deadpan depiction. In the 1980s Düsseldorf photography starts to develop new positions that reflect the spectator's visual culture

(see Fig. 147). These transformations, present in the work of other Düsseldorf photographers, could in this research be established through analysis of the digital tools that enforce this formal reconfiguration.

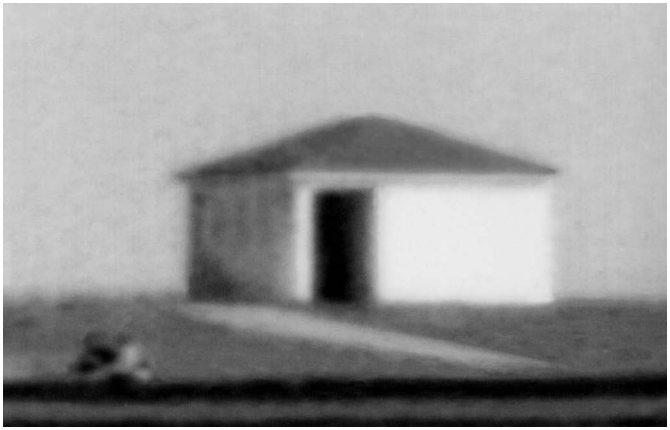

Fig. 147: Jörg Sasse, *3502*, 1995 (36 × 54 cm)

The period of generalization of the digital, set in the late 1990s, marks an increasing trend toward generic forms whose origin can clearly be traced back to the Bechers' typological work. If during the 1990s, Thomas Ruff and Andreas Gursky's images articulate through various strategies the plural image *within* the single image, the late 1990s implement the inscription of the photographs in image systems, which in Jörg Sasse's *Tableaus* is implicit even earlier. In Andreas Gursky's work, images of the Ruhr (i.e., *Rhein I*, 1996) or Paris (i.e., *Paris, Montparnasse*, 1993) are progressively replaced by a global imagery whose formal transfiguration is stripped down to generic type-images and whose content is generated based on grid systems. Thomas Ruff's categorial inquiry of stars (i.e., *Sterne*) is transposed to Internet imagery (i.e., *nudes*) or to strictly formal experiments (i.e., *Zycles*), bearing the same categorial architecture. Jörg Sasse explicitly interrogates the concept of the imaging system – in his case, allegorically addressing digital computing –, through his *Speicher*, which stores, articulates and displays photographs. The 1990s focus on generative and comparative processes within the structure of single images, re-inscribing (plural) serial constructions into individual photographs. The 2000s carry these strategies outside this limitation, although such single-image typologies often remain autonomous objects, individually displayed on a wall. But they stand for a globalized visual culture in which any image is necessarily submitted to an interpretative framework within a larger referential field, which again stresses the role of the beholder and the associated mechanisms of vision. Ultimately, the use of digital technologies in Düsseldorf photography has not significantly altered the strategies of its members. In an early stage, digital technologies only acted as one tool among others used to pursue a set strategy. Since the late 1990s, the digital has primarily

been addressed in the context of new image circulation economies. Thomas Ruff's *jpegs* clearly express and interrogate the technical contingencies of image formats and their implications but do not as such constitute technology-determined visual forms. The study of Düsseldorf photography through the prism of the digital has clearly opened its appraisal to new interpretative models. The correlation between its core mechanisms of digital imaging systems and serial imagery has allowed for an understanding of the photographic reconfiguration expressed by conceptual art. But could the general conclusions of this study be applicable to other Düsseldorf photographers not using such technologies? How could we articulate the work of those photographers using digital technologies (Ruff, Gursky and Sasse) and of those who don't (Struth, Höfer and Hütte)? Should Thomas Struth's 1986 picture *Shinju-ku (die Hochhäuser), Tokio 1986* – which illustrates the conclusive section of Kaufhold's "The Mask of Opticality"[5] – rather be ascribed to Walker Evans or to Jörg Sasse? The digital itself does not constitute a defining character of Düsseldorf photography. Its epistemological context of emergence, on the other hand, undoubtedly does.

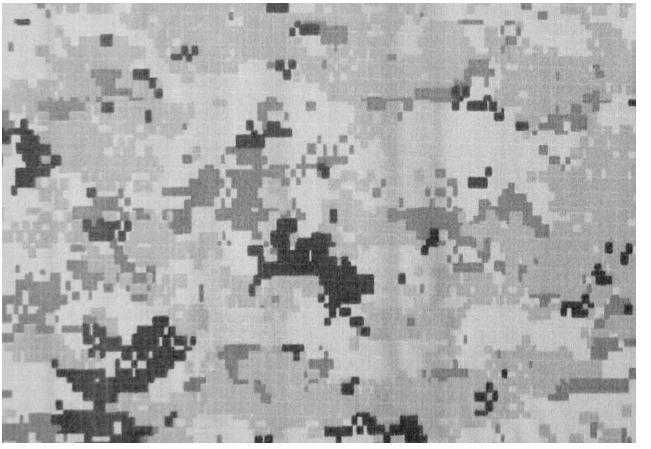

Fig. 148: MARPAT desert pattern, USMC (fabric)

From Düsseldorf photography to digital camouflage

In order to highlight this shift from documentary forms based on indexicality and interpreted as such to new models primarily addressing cognitive and mnemonic functions, two apparently unrelated examples shall be briefly discussed. The aim is to stress the fact that these imageries rely on an understanding of the contemporary world through its visual representation and to show that digital technologies and their associated visualization processes have altered our very

5 Enno Kaufhold, "The Mask of Opticality," op. cit., p. 68.

habits of spectatorship and have "reorganized"[6] vision itself. In 2001 the US Marine Corps patented a new camouflage pattern called MARPAT (Fig. 148),[7] which has since replaced most American military camouflage uniforms. The particularity of its pattern resides in the fact that it is based on small rectangular colored pixels, "provid[ing] camouflage in both the human visible light and the near infrared range."[8] The US patent technically defining the pattern mentions the fact that the fur of animals – the model that modern concealing technologies were often based upon – often varies from very dark on the back to very light colors on the belly,[9] "the gradation from dark to light break[ing] up the surface of an object as one thing."[10] MARPAT – colloquially called digital camouflage – "depends on [a] macro pattern resulting from a repeat of a micro pattern," which blends the segmented parts of the treated texture (fabric, etc.) into the background. Before elucidating the reason for this apparently odd analogy between camouflage technologies and digital photography, one particular aspect of MARPAT ought to be developed: the most effective way – stemmed by extensive scientific research – to mask a real object or person in real space resides in its concealment behind a modified incidence of its depiction. But that particular representation does not aim at copying or reproducing – unlike some old camouflage patterns that basically reproduced leaves in order to blend a subject into a vegetal background – but rather deconstructs the very mechanisms of vision. Paradoxically, the apparently best result of such a deconstructive method uses as a medium a pixelated pattern, which in the common understanding is simply a low-resolution image of reality. The scene perceived by the observer thus consists of a parasitic, composite cognitive view. The pixel-image stands in-between reality and its codified and formalized depiction, embodying a similar status to conceptual experiments of the 1960s (e.g., Jan Dibbets). Epistemologically, this procedure highlights the importance of representation above its physical reference – and concomitantly points to the fundamentally historical condition of human sight, whose implication in the digital era is only beginning to be evaluated, and in which mechanical vision supplants the human eye. Historically, camouflage had been developed during World War I as a counter strategy to circumvent aerial photographic reconnaissance, which started to be systematically used.[11] As such, that concealing strategy used in warfare directly derives from the use of mechanical recording devices that were, in that context, primarily mounted on airplanes. The generalized use of cameras in the early twenty-first century – often mounted as much on soldiers or rifles as on missiles or

6 See Jonathan Cray, *Techniques of the Observer. On Vision and Modernity in the Nineteenth Century*, op. cit., p. 2.

7 The acronym MARPAT stands for Marine pattern.

8 *Patent US 6805957 B1* for US Marine Corps utility uniform, November 7, 2001, p. 1. Available at https://patents.google.com/patent/US6805957B1/en, accessed on June 26, 2018.

9 Ibid.

10 Ibid.

11 For a history of camouflage through its relationship with photography and vision, see especially Hanna Rose Shell, *Hide and Seek. Camouflage, Photography, and the Media of Reconnaissance*, New York, Zone Books, 2012.

drones – influences the development of camouflage patterns, which more than ever respond to the use of optical recording devices, taking pictures as much from the air as from the ground. To a certain extent, the MARPAT's pixelated structure thus constitutes a logical answer to the digital devices it is supposed to seek concealment from.

Fig. 149: Thomas Demand, *Grotto*, 2006 (detail)

German photographer Thomas Demand, whose strategy addresses the relationship between several realities (referent, model, depiction), has interestingly used the very same process. The artist builds and subsequently photographs paperboard models that re-enact photographs of well-known media images. The purpose isn't illusionistic but rather aims at addressing collective visual memory, confronting the viewer with images that are already known. In his recent project *Grotto* (2006), built for the Serpentine Gallery in London in collaboration with Rem Koolhaas and ARUP,[12] Demand reconstructed a cave situated in Mallorca and represented on numerous postcards[13] with approximately fifty tons of cardboard, using roughly 900,000 discrete pieces. The overall project won't be developed here, as only one particular aspect is of interest in this context. In order to create some unfocused areas in the photograph – Demand does not use digital retouching tools –, he physically created cardboard pixel layers[14] that would give the impression that some areas were blurry (see Fig. 149). The use of digital 3D production technologies was the outcome of the artist's interrogation of the digital and not only the resolution of a specific problem:

12 See for example *Thomas Demand*, exhibition catalogue (Serpentine Gallery, London, 2006), Munich, Schirmer/Mosel, 2006.

13 A set of postcards is reproduced in a booklet, contained in the box set produced with the Fondazione Prada, which allows comparing sections of Demand's *Grotto* and source material. *Thomas Demand. Processo Grottesco/Yellowcake*, Milano, Progetto Prada Arte, 2008.

14 Tamara Trodd, "Thomas Demand, Jeff Wall and Sherrie Levine," in Diarmuid Costello and Margaret Iversen, *Photography after Conceptual Art*, Chichester (West Sussex) and Malden (MA), Wiley-Blackwell and Association of Art Historians, 2010, p. 141.

> "*The other starting point for Grotto, 2006, was my deliberations on how the digital could be incorporated into my images [...]. I felt certain that [the use of digital cameras] wasn't the path for me. So I decided to take that representational apparatus, the digitalized world (which is only interesting to me in this context), and translate it into reality and then photograph it in order to regain it as a two-dimensional image.*"[15]

In this particular case the photographed object is "digitized" in real life, in order to produce a more "real" perception of it. Demand's strategy thus produces a fundamental questioning of the common relationship between a *continuous* depiction of reality – as W. J. Mitchell or Peter Lunefeld theorized it – and a *discrete* representation of it, and it also probes the indexical connection in photography.[16] Although not pixelated, Demand's leaf patterns used as wallpapers in the exhibition and displayed as insert in the Schirmer/Mosel exhibition catalogue echo camouflage strategies and more generally point to the ambiguous relationship between 2D representations and their 3D referent – "media as architecture" as Beatriz Colomina argues in a text of the catalogue.[17]

The natural procedure of breaking apart a surface, defining the camouflage structure of animals, or the production of analogue pixels in the real world in order to manipulate optical perception can consequently be interpreted as proto-digital, as breaking reality into formalized picture elements is the core mechanism at play in digital imaging systems. These strategies address a zone – between reality and perception – in which many artists today operate. And that particular area connects MARPAT and the *Grotto* project with Düsseldorf photography. Grid constructions in the work of Ruff, Sasse and Gursky invest an interstice between reality and depiction – when the photographic apparatus is considered as it has often been conceived. They further epitomize the convergence of two areas that Rosalind Krauss laid out as being necessarily opposed in her 1979 article "Grids": grid and mimesis. She states that the grid structure "declares the modernity of modern art" because it "states the autonomy of the realm of art. Flattened, geometricized, ordered, it is antinatural, antimimetic, antireal. [...] In the overall regularity of its organization, it is the result not of imitation, but of aesthetic decree."[18] As such, the grid possesses an autonomy that has collided with reality as it did during the advent of conceptual photographic practices in the 1960s. The antimimetic structure collides, dialogues, addresses and enacts a rapprochement

15 Ibid., p. 51.

16 The project also leads to key disagreements between representationalist philosophical positions (or indirect realism) and naive realism (or direct realism). The first position states that the real world only exists through the way it is perceived; the second that reality as it is perceived equals the physical reality.

17 As much because he reconstructs media image in 3D, than because he makes models of modern architecture, which Colomina considers as a mass media. See Beatriz Colomina, "Media as Modern Architecture," in *Thomas Demand*, exhibition catalogue (Serpentine Gallery, London, 2006), op. cit., p. 19.

18 Rosalind Krauss, "Grids," op. cit., p. 50.

between several layers – the physical reality, the visual in-between and representation. The work of Thomas Ruff, Andreas Gursky and Jörg Sasse operates within that area. Their images are bi-dimensional and re-enact the grid structure through the orthogonal spaces they create. Their work further embodies a self-reflexive aspect, as the images themselves address the convergence of images of reality and the two-dimensional: like the Bechers before them, they choose to merge reality and depiction, producing a codified correspondence between the two. The mathematical formalization of reality results in the focus on visual forms that address their consumption methods rather than their original relationship to a physical reality. Indexicality as defining parameter is deconstructed, and the focus is shifted toward what gradually becomes the real: as some media theorists such as Paul Virilio[19] have claimed, the image increasingly precedes reality and accordingly replaces it.

The chief function of digital technologies lies in their function as markers of the reconfiguration that connects the different layers of the representational apparatus. As MARPAT patterns, which belong to several strata – while they exist physically in reality, they clearly operate as images in perceptive layers as well –, the tools and strategies employed by Ruff, Sasse and Gursky mark the nodal points of interference between several spaces, deconstructing transparency and related representational concepts. Apparent pixel structure (e.g., Ruff's *jpeg* series) and digital effects (e.g., Sasse's *Tableaus*) highlight the intermediate character, in between various visual strata. The physical world is not only increasingly perceived through its photographic depiction. But that depiction is progressively altered into a generic representation, which considerably shifts away from the concept of imprint or trace. The conception of the photographic image as construct, subordinated to economic, social or political powers and increasingly enacted by a limited number of proponents, seems more accurate than ever before. And its relationship with reality has undergone an important reconfiguration – the appearance of computational or augmented forms of photography merging with 3D renderings or scans constitute the recent symptoms of that shift[20] – as was noted by Jonathan Crary in the introduction of *Techniques of the Observer* already in 1991.

> *"The formalization and diffusion of computer-generated imagery heralds the ubiquitous implantation of fabricated visual 'spaces' radically different from the mimetic capabilities of film, photography and television. These latter three, at least until the mid-1970s, were generally forms of analog media that*

19 In the specific context of warfare, Virilio argues in *War and Cinema. The Logistics of Perception*, that the reality of the war landcsape becomes "cinematic," because of its increased visibility (which derives as much from lens flares than from cameras). See Paul Virilio, *War and Cinema. The Logistics of Perception,* New York, Verso Books, 1989.

20 See for example Lev Manovich, *Software Takes Command*, New York, Bloomsbury Academic, 2013, William Uricchio, "The Algorithmic Turn. Photosynth, Augmented Reality and the State of the Image" in *Visual Studies*, Vol. 26, No. 1, 2011 or Maxime Guyon, Milo Keller & Joël Vacheron (ed.), *Augmented Photography*, Lausanne, écal, 2017.

> *still corresponded to the optical wavelengths of the spectrum and to a point of view, static or mobile, located in real space. [...] Increasingly, [the] emergent technologies of image production are becoming the dominant models of visualization. [...] Most of the historically important function of the human eye are being supplanted by practices in which visual images no longer have any reference to the position of an observer in a 'real,' optically perceived world."* [21]

The main emphasis of this study targeted the understanding of the reconfiguration of *depictive* strategies. It aimed to examine how in the 1960s and 1970s the depiction of objects in the physical world was increasingly replaced by the depiction of images. It further addressed the modalities through which representational strategies in Düsseldorf photography were affected by this reorganization. But ultimately, if *depicting* constituted the core focus, *seeing* cannot be excluded from that interrogation. The representational shift assessed throughout this research ultimately raises the question of the impact of these reconfigurations on vision itself, and its increased mechanization.

21 Jonathan Crary, *Techniques of the Observer. On Vision and Modernity in the Nineteenth Century*, op. cit., p. 1 – 2.

PART 6

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INDEX

I am indebted to numerous colleagues from the Film Studies and Art History Departments of the University Lausanne and to many friends, with whom I shared ideas and deliberated frequently throughout the years of the inception and realization of this project. Special thanks to Marc-André Weber, Claire-Lise Debluë, Thibault Walter and Adeena Mey. I would like to thank Olivier Lugon for his guidance, his intellectual generosity and consistent patience throughout the realization of this endeavor, and to express my thankfulness to Bernd Stiegler and Christoph Schaden for their expertise, their kind help and their time in the conclusive phase of the dissertation, which led to this book. My gratitude also goes to Davide Nerini, Faye Corthésy and Sylvain Portmann for their relentless scrutiny of the manuscript and their productive comments, and to Kristie Kachler, whose proofreading of the book substantially improved its formal qualities and overall clarity.

For the opportunity to spend a productive one-year research residency at the Universität der Künste in Berlin under the fruitful tutorage of Martina Dobbe, I would like to thank the Swiss National Science Foundation (SNF) and the scholars who supported my application, Kornelia Imesch Oechslin and Susanne Bieri. Moreover, I would like to express my gratitude to the Faculty of Arts of the University Lausanne for being able to pursue this research while teaching in its ranks.

I would like to thank Annika Linnemann, Johanna Tönsing and the transcript team, for all their help, support and confidence in the process of realizing this book. I am thankful to the publication fund of the Arts Faculty of the University Lausanne, to the Société Académique Vaudoise, the Swiss National Science Foundation (SNF) and to the Fondation pour l'Université de Lausanne, for believing in this project and supporting it financially. Finally, thanks to Omnigroup for the insightful layout ideas and all the help and patience throughout the final stages of production of this book.

Above all, my deepest expression of appreciation goes to Séverine Graff, whose involvement I could not recount fittingly.

IMAGE CREDITS

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IMPRINT

Design and layout: Omnigroup, Lausanne
Typeface: Alpha Book, Horizontal by Omnitype
Paper: Holmen Trend, Algro Design
Printer: Pöge Druck, Leipzig
Proofreading: Kristie Kachler

Bibliographic information published by the Deutsche Nationalbibliothek. The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at http://dnb.d-nb.de

Published with the support of the Fondation pour l'Université de Lausanne, the publication fund of the Arts Faculty of the University Lausanne, the Société Académique Vaudoise and of the Swiss National Science Foundation (SNF) for the prepress version.

Printed in Germany

Print-ISBN: 978-3-8376-3902-5
PDF-ISBN: 978-3-8394-3902-9
DOI: 10.14361/9783839439029

FONDATION POUR L'UNIVERSITÉ DE LAUSANNE
Société Académique Vaudoise
FNSNF Swiss National Science Foundation
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