



# The “Post” in Postscript: Post-Productive Thinking, Re-Formatted Images

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## 1. The Digital Image and Societies of Control: How to Disrupt an HD Reality

In this article, I seek to discuss the principles of modulation and variation in Deleuze’s canonical essay “Postscript on the Societies of Control” (Deleuze 1992). Analyzing and testing what Deleuze recognizes as “inseparable variations, forming a system of variable geometry” and as a “self-deforming cast that will continuously change from one moment to the other [...], like a sieve whose mesh will transmute from point to point” (1992: 4), I will focus on the digital image and its relation to control mechanisms in our contemporary mediatized society.

Especially higher resolved digital imagery, HD images in short, seem to satisfy scopical and governmental cravings. HD implies the rendering of reality into a computable and controllable, fully resolved ‘image’, where it seems one can indefinitely zoom in, address and surveil even the tiniest pixel. HD offers hyper-visual images where allegedly *everything* is in view and is controllable, because it is modifiable. At first glance, HD could hence easily be equated to Deleuze’s understanding of power as a form of unlimited modulation and variation. The pixel density of HD images is extremely variable and adaptive, on the one hand serving as a device to continuously scan, monitor and observe reality, and on the other hand being itself flexible and fitting into different medial surroundings. HD seems to stand in for hegemonic, panoptical and ideological aesthetics (Rothöhler 2013: 60). With their controlled views, in which every pixel appears to be put in the intended place, HD imaging gives the impression of manipulating and standardizing the depiction of reality, of delivering images where a lot rests beneath the threshold of resolution and is *not* resolved but rather dissolves in the vast number of pixels.

In this article, I will propose a different perspective on HD imagery. With the help of two political (art)works – the video-tutorial “How Not to Be Seen: A Fucking Didactic Educational.MOV File” (Steyerl 2013) by the German artist/theorist Hito Steyerl and the collaborative projects of the artistic research group Forensic Architecture – I ascribe to HD an activist, political and philosophical potential. I seek to unfold the following as-



sumption: High-resolution not only fosters scenes of surveillance and control. On the contrary, the high density of information and data of HD images demands to be varied, to be transmuted and modulated. What I will draw attention to are various possibilities of encountering digital images with these characteristics so as to reconfigure, alter and modify the smooth surfaces that constitute our reality. HD imaging has to be thought of in practical terms. In this context, I will use the term *post-production*, understanding this form of handling images as a possibility to undermine the hegemonic role of HD with and through the help of digital images, or more accurately: with the help of their ability to be *re-formatted*. HD, with its pixel density, stands for imaging in a post-productive manner. From that point of view, images are never completed but undergo constant change. This potential produces not only opaque surfaces, but counter-aesthetics and free spaces of resistance. Most notably, HD, considered in terms of post-production, grasps digital images and their modulations as an epistemological process, where images not only frame reality in fixed representations, but function as tools or methods to produce something new, something different, and to deal with a mediatized world that is saturated with images. I therefore suggest a re-reading of Deleuze’s definition of power as infinite modulation, arguing that HD’s capacity to modulate and vary offers potentials to diverge with and through modulation from dominant modes of representation in post-Fordist times.

I will proceed in three steps: First, I will investigate Deleuze’s thoughts on the relationship between societies of control and the electronic or digital image. Subsequently, I will discuss post-production as a counter-practice. I will rely on the already mentioned artworks to establish post-production as a form of resistance and a way of performing philosophical thinking. Third, I will identify Deleuze’s philosophical practice as a form of post-production itself, thereby posing the question of how the “post” in “postscript” should be read.

## 2. Deleuze and the Digital Image

Already in 1985, in anticipation of his “Postscript on the Societies of Control”, Deleuze suggests thinking new forms of societies and their mechanisms of power in correlation with electronic and digital images. He calls them “new images” and “new automatisms” (1997: 265). The last pages of his cinema books, in *Cinema 2: The Time-Image*, deal with “a new computer and cybernetic race, automata of computation and thought, automata with controls and feedback” (1997: 264-65). Reflecting on the future of cinema, Deleuze ponders the philosophical potential of the medium and its impact on reality at a time when the technological base of imagery changes. For Deleuze, modern cinema is thus capable of acting as a source of belief:



The modern fact is that we no longer believe in this world. We do not even believe in the events which happen to us, love, death, as if they only half concerned us. It is not we who make cinema; it is the world which looks to us like a bad film [...]. The link between man and the world is broken. [...]. Only belief in the world can reconnect man to what he sees and hears. [...]. Restoring our belief in the world – this is the power of modern cinema. (1997: 171-72)

The emergence of the electronic and the numerical image puts cinema and its potential to strengthen the belief in the world at risk. For Deleuze, there are two options: "either [the new imagery] had to transform cinema or to replace it, to mark its death" (1997: 265)<sup>1</sup>. 'New' images can be distinguished through their lack of an "outside" (Deleuze 1997: 265). That implies new forms of (audiovisual) organization. Not a frame or window, where the outside is separated from the inside, structures reality anymore. Rather, Deleuze ascribes to the new images the potential to indefinitely reorganize and vary: "a new image can arise from any point whatever of the preceding image" (1997: 265). Every point *in* the image can be transformed into an outside. What can be described as the overall logic of digital imagery, in which every pixel is modifiable, leads Deleuze to the conclusion that images have to be understood as "a table of information, an opaque surface", where data is inscribed (1997: 265). This form of imagery based on information, "the brain-city, the third eye, [is] replacing the eyes of nature" (Deleuze 1997: 265).

For Deleuze, the question if cinema will have an afterlife in these new forms of society depends on "its internal struggle with informatics" (1997: 270). Rethought in film-philosophical terms, this effort is emblematic of an overall negotiation regarding the capability of film to reconnect man to the world. Therefore, these forms of new imaging first of all have to prove their artistic and philosophical ability, "a powerful, obscure, condensed will to art" (Deleuze 1997: 266). The new image has to do this in a "modern world [...] in which information replaces nature", being confronted with the situation "that the new methods may invalidate all will to art, or make it into a business, a pornography, a Hitlerism" (Deleuze 1997: 269, 266).

When we suspend the difference between inside/outside and build upon modulation and variation, it becomes possible to establish a link between Deleuze's ideas about the new images and the society of control. Similar to electronic and digital imaging, the power mechanisms of information societies too do not rely on frames, rigid racks or confinement anymore: "[w]e are in a generalized crisis in relation to all the environments of enclosure – prison, hospital, factory, school, family. The family is an 'interior', in crisis like all other interiors" (Deleuze 1992: 3-4). In contrast, "ultrarapid forms of free-floating control that replaced the old disciplines operating in the time frame of a closed system" (Deleuze 1992: 4) have now become the dominant mode that guarantees the

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<sup>1</sup> The claim that cinema 'dies' under the influence of the digital initiated a rich controversy in film studies under the headline of "Post-Cinema". For further reading, cf. Denson/Leyda 2016.



social order. This can easily be related to the way digital images circulate through data streams and beyond fixated medial dispositifs, like cinema or television. Here, in line with Deleuze’s observations, corporate identity comes before medial identity: Netflix, for example, is watched in cinemas or on television and computer screens, which can no longer be separated from their specific content or aesthetic features. Digital imagery therefore cannot be defined in terms of fixated medial systems.

Also, in alignment with these new forms of social and medial systems, the identity of the subject is vaporized and becomes “dividual” (Deleuze 1992: 7). Even here we could say that the differentiation between the inside and the outside, the self and the other, is abolished. In line with the notion of “capturing”, which is proposed by Philip Agre, identity or subjectivity would no longer be a fixed or embodied characteristic, an inherent quality that belongs to somebody or something (Agre 1994: 105). Following Agre, identity rather consists in the capturing and ensuing *in-formation* of data: The gathered *in-formation* about an (in)dividual means nothing until it is given a form ‘from the outside’, until it is *in-formed* or *formatted*. David Joselit describes this social state permeated by data with the help of medial formats and the unlimited reformatting of medial entities. From the perspective of media/art theory, he switches the focus from “medium” to “format” to emphasize the processes of differentiation that are not bound to a material, that is, to an ontological specification (2011: 82). Medium, in Joselit’s understanding, is something enclosed, sealed off and finished, an artwork as an entity or object, so to say, that he wants to overcome. Joselit speaks about an

‘epistemology of search’, where knowledge is produced by discovering and/or constructing meaningful patterns – formats – from vast reserves of raw data [...]. Under these conditions any quantum of data might lend itself to several possibly contradictory formats (2011: 82).

What I would like to deduct from Joselit’s argument is that the dividual in the Deleuzian sense consists in the expanding information storage of databases, which can be differently addressed, interpreted and read. Identity condenses and dissolves into indifferent data sets – depending on the changing contexts and the modes of addressing the ‘question’ data has to respond to. For Deleuze, the subject in a society of control is a ‘surfer’, “undulatory, in orbit, in a continuous network” (1992: 6). Considering that surfing – that is, in the neoliberal context of the digital, literally every move that is made ‘on-line’ – generates and stores data, the subject is exposed to algorithmic interests and the selective ‘interpretations’ on which the creation of digital profiles and data doubles is predicated.

In a way, society and its individuals are therefore modifiable like HD images, something which is reflective of a social reality that has become increasingly more gaseous or liquid. In contemporary theory, Deleuze’s foresight in the Postscript is validated in no-



tions like “liquid modernity”, proposed by Zygmunt Bauman and David Lyon. The authors emphasize the rapidity of (social) change and the inability of societies to cope with it, not being able to provide a reliable framework of reference for collective and individual actions (2013: 6). Social ties melt or ‘crumble’ away, a process that is also indicated by the term “granular society”<sup>2</sup> as used by Christian Kucklick. Kucklick describes different perspectives on society when its scale changes through the focus on data. A “new resolution” redefines bodies, politics, labor and emotions, the value and meaning of which are derived from the accumulation of data (Kucklick 2015: 10). Here again, Deleuze’s concept of the “dividual” and the recognized “vast varieties of raw data” (Josef 2011: 82) coincide. Similarly, one could add the flexibilization of social structures highlighted by Deleuze with regard to the development from disciplinary societies to societies of control. A granular society in the sense of Kucklick has a bendable structure, which does not rigidly in/exclude but permanently modifies its borders and frames.

At this point, it might have already become clear that digital phenomena, based on data, depend on their (re-)formatting, on different forms of (re-)interpretation and post-production to offer meaning and, as I will argue further, re-establish a “link between man and the world” (Deleuze 1997: 171-72). Obviously, global corporations are hegemonic with regard to the formatting and interpretation of data. In the following, I will further analyze the outlined structures of a society of control based on digital data, now with regard to possibilities of resistance against its dominant forms. What comes into focus then are various post-productive practices in the context of HD imagery.

### 3. Post-Production as Counter-Aesthetic?

The notion of post-production is specifically tied to the context of neoliberal capitalism and its allegedly smooth and accelerated flows of production. It represents economic processes of production that are related to the processing of cultural phenomena, such as moving images, music or architecture. ‘Post-production’, as the hyphen indicates, implies that there is also a state of ‘production’ and ‘pre-production’. This can be observed, for example, in the work processes of the film industry. Pre-production describes the preparation phase, production the shooting itself and post-production all the work on and with the captured material (Krautkrämer 2017). What this triad makes obvious is that post-production is in a special manner involved with the medialization of reality. Post-productive entities are not exclusively ‘pure’ computer images, even if special effects, computer graphic objects and figures are added to the image in post-production. Nevertheless, post-production indexes a photographic ‘contact’ between recording de-

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<sup>2</sup> All translations from Kucklick’s book are my own.



vice (image and sound) and the world. From a documentary point of view, this reference often is interpreted negatively as a veiling of reality or even as its manipulation.

Following the current discussions of the industry, it seems that HD is treated as the convenient format to guarantee an efficient, money- and time-saving process. HD and post-production are often mentioned in the same breath with the notion of ‘workflow’. Workflow refers to the idea of keeping the transitions between the individual working steps as smooth and continuous as possible. With the information density it offers, HD ensures that there is a lot of material that can post-productively be worked on. Through HD, production more and more means collecting as much information and data as possible and aesthetically exploiting them after the acquisition. As Krautkrämer makes clear, the expression ‘fix it in post’ stands for a certain degree of carelessness during the shooting itself (2017: 3). In other words, the decision-making-process can be postponed to after the shooting.

Moreover, in the specific context of film production, the difference between the inside and the outside of the image becomes increasingly obsolete. This has to do with aesthetic decisions that used to be made during the shoot, i.e. when a camera took a picture of reality and consequently the ‘framing’ and the specific ‘shot’ had to be adjusted. The shot, which stylistically condenses the production process of moving images as meaningful units, loses a certain amount of its aesthetically binding character. Therefore, post-production has an influence on the way the camera captures reality. It seems no longer necessary to decide during the shooting whether a scene should be a close-up or a long/wide shot. Better understood in terms of indefinite composition, perhaps similar to a data base like the ones discussed by Agre (which require an interpretation and selection of the accumulated information), the HD image too needs to be re-formatted in post-production to extract meaningful units. But it also makes possible the flexible handling of imagery until the very end of the production chain. One could therefore speak of a skimming data collection undertaken by the exposure moment on the CCD chip, which registers more luminance values than will ultimately ‘fit’ into *one* final image. In post-production, these data are transformed into information and this process can be described as a survey situation – at least this is how the German film director Christoph Hochhäusler puts it. He advocates the so-called “Mastershot Coverage Technique”, in which a film scene is recorded in a maximum of two higher resolved master shots. In post-production, a wide range of desired settings can then be extracted from the data-tight image: “[t]hese master shots would not yet be images, rather fields of vision that capture the essential actions of a scene” (Hochhäusler 2011; my translation). Another prominent example are the workflow-oriented productions of someone like David Fincher. His style is described in terms of “locked up” imagery (Szhou 2014), where every element in the frame is positioned intentionally. Fincher attaches great importance to the constant transitions between production and post-production. His film sets can be



understood as data environments that not only produce images, but that also provide these images with a substantial amount of metadata important for production. Principally, it would be possible to edit the images produced in this context just on the basis of exposure values and saturation levels and without having a look at the actual content of the image. Also, the generated audiovisual information needs to offer as much margin as possible, allowing to extract the required image out of the collected quantity, i.e. the high pixel numbers (cf. Linseisen 2015).

The described changes in these production processes that condense in the high-resolution image format and the focus on post-production go hand in hand with the novel forms of capitalism that Deleuze identifies. While the capitalism of the 19<sup>th</sup> and early 20<sup>th</sup> century was geared to production and based on the factory as a an enclosed, fixed dispositif, the capitalism of the societies of control is dedicated to the distribution and re-assembling of a product, that is, its never-ending post-production, the “transformation of the product more than [...] [the] specialization of production” (Deleuze 1992: 6). This also relates to the film industry, where the concept of the factory becomes increasingly blurry due to the role of post-production. In line with what Deleuze outlines, part of the production process is here being outsourced to the ‘Third World’ (1992: 6) too. The new mechanisms of image production have brought with them the so-called ‘pixel proletariat’ – marginalized groups of people at the margins of data capitalism, who produce the sealed imagery that never stops circulating in global data streams (Deyer-Whiteford 2015; Scholz 2016).

In what follows, I will propose an appropriation of post-productive practices beyond the described highly professional workflows und manufacturing contexts. Post-production can also be understood as an artistic or even grass-root practice that offers an alternative to the neoliberal dynamics and their distribution channels. The indecisiveness, the smoothness of the visual material can be seen as allowing subversive questioning and triggering activist tendencies.

Simon Rothöhler points out the democratizing propensities through which “autonomous production contexts and alternative film-aesthetic condensation processes” were made possible by the ubiquitous accessibility of HD technology (2013: 63)<sup>3</sup>. What used to be audiovisual quality that was only used in high-end-production contexts is now, at least to a certain degree, realizable with regular and accessible camera techniques, for example even cellphone cameras. On the one hand, content can thus be produced beyond institutionalized production contexts but nevertheless meet qualitative requirements that become necessary when films attain a certain reach, e.g. through distribution and exhibition contexts such as festivals or museums. On the other hand, new aesthetic forms can be developed. Following Jens Schröter (2011), Rothöhler emphasizes a “Coun-

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<sup>3</sup> All translations from Rothöhler’s book are my own.



ter-High-Definition-Cinema” which “brings the HD resolution” to an “increased chance of deviation”. This indicates that a high number of pixels not only means clean and sealed compositions, but can also cause glitches, disturbances or blurriness, precisely through the extensive micro-segmentation of the image, the vast number of pixels (Rothöhler 2013: 63).

Deleuze recognizes the passive danger to the capitalism of the societies of control in disruption and in errors – one could also say: in the glitch<sup>4</sup>. By contrast, he identifies the active danger in piracy and the spreading of viruses. A contemporary example that, under digital circumstances, brings both components together – the passive and the active, disruption and the virus – is the movie *Money Monster* (2016, dir. Jodie Foster). It tells of a stock market crash, the alleged cause of which was a glitch in the algorithm of an automated trading system, induced by an act of piracy or hacking. In the course of the film it becomes clear that it was not the computer error that initiated the depreciation but the greed of an entrepreneur. In a sense, the movie returns to the old disciplinary system and suggests that such failures cannot occur through algorithms but only through human intervention, through a human “monster”, as the movie title suggests. Yet, another agency is addressed in *Money Monster*, one that represents (according to Deleuze) the *active* danger to the new forms of capitalism: the hacker. In the movie, hackers first of all alter the calculations of the algorithm and secondly identify the ‘real error’: the greedy industrialist, who at the end of the film has to justify himself for his misdeeds in court. With regard to the digital image, and in view of a possible combination (as exemplified in *Money Monster*) of the two dangers that Deleuze identifies – the glitch and the hacker – post-productive practices can become effective tools in the effort to counter the medial infrastructure of today’s capitalism. In the following, I will focus not so much on the errors that hinder, also aesthetically, a running system or a self-contained composition. With the help of Hito Steyerl’s use of and thoughts on counter-post-productive practices, I will instead identify in hyper-aestheticized, bright and glossy HD imagery a potential to subvert and jeopardize the standards of a world saturated with HD images.

#### 4. Post-Production to Hide, to Camouflage, to Disappear: How Not to Be Seen

This is a resolution target. It measures the visibility of a picture. This is a resolution target. It measures the resolution of the world as a picture. Resolution determines visibility. Whatever is not captured by resolution is not visible. (Steyerl 2013a: 00:01:30-00:01:47)

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<sup>4</sup> “[T]he societies of control operate with machines of a third type, computers, whose passive danger is jamming and whose active one is piracy and the introduction of viruses” (Deleuze 1992: 6).



This panoptic postulate comes from Steyerl's video artwork "How Not to Be Seen: A Fucking Didactic Educational.MOV File". While the text is spoken by a computer-generated male voice-over, a Google Earth zoom-out sets in. Starting with digitally simulated views of so-called resolution targets (oversized test-images on the ground of the Californian desert used to calibrate aerial photography), the zoom glides over the American West Coast and the continent until the planet appears to be a round, perfectly shaped sphere against a black background. But this view does not fill the entire image frame. The Google Earth zoom takes place in a square: a digitally added image within the image placed in front of a full frame green screen. The square area, visible in the middle of the green image, in which the digital zoom was mounted, is, as could be seen in the previous scene, also a resolution target, namely, the USAF 51 test chart, which has the same pattern as the resolution target in the Californian desert. The chart is mounted on a tripod, one that is used for image productions in studios and on film sets. In Steyerl's video, the view of the resolution chart serves again as the background for the virtual target resolution on Google Earth, which is painted on the real desert ground at Cuddeback Lake.<sup>5</sup>

"How Not to Be Seen: A Fucking Didactic Educational.MOV File" is conceptualized as a video tutorial. In five lessons, the recipient is introduced to strategies of becoming invisible in a fully resolved, image-dominated reality. The single lessons demonstrate how one can deal with high-resolution digital imagery in order to counter its ubiquitous visibility. The "Fucking Didactic Educational.MOV File" can be understood as a form of critique in the sense that it emphasizes the necessity to hide in this image-reality: to delete (oneself), to disappear from the screen. Oscillating between photo- and hyper-realistic images, it veils, erases, camouflages and thus points out that with the help of high-resolution it can be decided what is in/visible and, one could add, non/existent. As the above described Google Earth zoom shows, the correlation of high-resolution, in/visibility and non/existence takes place on a planetary scale: the whole earth becomes an HD image made possible by calibration with the help of resolution targets, which the planet both contains and exhibits via satellite views.

"How Not to Be Seen" entails a media reflexive comment on the use of post-production. The mise-en-abyme structure of the 'resolution target in the resolution target' and the green screen which is visible in the picture most concisely clarify this. The resolution charts are part of the production, the post-production and the HD image, meaning that they themselves represent a post-produced image output. They become eye-catching through the zooming operation and fill the frame as ornamental patterns, as virtual aerial or pixelated ground views on Google Earth and as captured HD shots of the cracked concrete slabs in the Mojave Desert that have been reconquered by nature.

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<sup>5</sup> One can see the resolution target on Google Earth using the following coordinates: 35°15'28.16"N 117°28'52.03"W.



Appearing in the image as technical equipment in production contexts, they exhibit their functionality. On the one hand, the resolution targets in the image are thus responsible as calibration instruments for the production of the “Fucking Didactic Educational.MOV File”. On the other hand, they become themselves visible as part of the post-produced image, being meta-reflexively represented on a film set.

In “Lesson III: How to become invisible by becoming a picture”, the viewer sees Steyerl’s face in front of a sequence of resolution targets and test images. Cut. Steyerl’s face is filmed from the side. Make-up is applied to her face, imitating the resolution target pattern on her forehead and cheeks. During the make-up-tutorial, a voice-over lists further possibilities of becoming invisible: “to camouflage, to conceal, to cloak, to mask, to be painted, to disguise, to mimicry, to key” (Steyerl 2013: 00:04:46-00:05:10). With every brush stroke, Steyerl’s face becomes more colorful, without adding anything to the composition. The color is the same as that of the background, and its application causes Steyerl’s face to dissolve in front of the resolution targets. The functional calibration image provides ornamental features, and the more Steyerl’s color-filled face mimics a kind of pictorialness, the more the pictorialness of the resolution chart comes to light through the transparent face. In the end, her face has almost completely disappeared and is fading into a flashing Google Earth. Immediately a zoom begins, which ends again in the Mojave Desert at the site of the resolution targets, which now serve for the calibration of pixel-based cameras. After the zoom, people dressed as pixels are seen staging another possibility of becoming invisible in an HD context, where the world manifests itself literally as a higher resolved image. Simultaneously, the practice of dressing up as a pixel is also prompted by the voice-over, suggesting, as Steyerl demonstrates with her test image mimesis, the idea of oneself becoming an image. Here, it seems possible to disappear into the mass of pixels or even to be smaller than the minimum value of the image reproduction. The video suggests that nothing exists below the pixel boundary. It is possible to become invisible if you play around this threshold and shrink to a size equal to or smaller than it.

In addition to the resolution target, a green screen that is also in the image – once as object, then as the green background of the production contexts, and assumedly invisible when virtual und CGI figures are shown ‘successfully’ – complicates the visual relation between production, post-production and image. Chroma keying uses the same color settings. In order to make a person disappear, it is best to wrap the person in the color of the green screen. These techniques thus ensure that figures, objects, etc. filmed in front of it become invisible and that pictorial pieces that do not appear in the pro-filmic situation can become visible in the image through post-production. The green screen normally functions as a substitute for something that appears in the final image product, while it itself disappears. This is obviously different in Steyerl’s video. In “How Not to Be Seen”, the green screen can be perceived sharply and in the center of the image, while persons,



often ghostly, like ephemeral visual effects, dissolve in front of it, thereby certifying its functionality. In the video, semitransparent, computer-animated figures (in architectural 3D animations representative of people or residents) walk into the filmed images of the resolution targets at Cuddeback Lake. At the same time, ‘real’ people are transparent, because they wrap their bodies in green morphsuits or ‘green screen burkas’, which make them disappear in front of the green screen during chroma keying.

In one scene of Steyerl’s tutorial, the viewer sees a computer-generated reality that has the appearance of a computer game, a digital model of a hotel complex, a shopping mall or, as it says in the video, a “gated community”. The digital world suddenly dissolves into a cloud of pixels before flipping back as a two-dimensional, flat image to reveal the view on a computer screen. Behind the digital high-resolution reality, there seems to be a second one. The ‘background image’ of the desktop is the well-known digitally simulated, pixelated view of the resolution target from Google Earth. This image does not stop at the supposed edges of a computer screen, but reaches over the edge of the frame, softening and blurring seemingly strict frames. A closer look reveals that what this view exposes is not at all a computer screen, even though the task bar, the WiFi-symbol, the indication of the battery status and the folders stored on the desktop suggest this. Rather, what the viewer sees is a green screen on which a Mac desktop view seems to be integrated as a screen mirror, which is not only vertically stretched, but which also covers the floor of a supposed film set horizontally. The digital reality protrudes into the post-production context indicated by the chroma keying equipment. In front of this background, semitransparent figures appear in green burkas and begin to dance. In this post-produced interweaving of pictorial worlds and their various resolutions it is difficult to identify any spatial and temporal coherence. Does the computer-generated, high-resolution digital world lie within, temporally before or ontologically in front of the pixelated Google Earth world? And does the latter, in turn, lie within, temporally before or ontologically in front of a post-producing, supposedly extra-medial reality, which in turn is populated by already post-processed computer generated figures? In the depicted scene, outside and inside are not separable anymore. In Steyerl’s work, various contents are repeatedly visible in different ways and, above all, framed anew, as if “How Not to Be Seen” was carrying out a zoom-out operation that pushes the image frame further and further outwards but, at the same time, folds or nestles it inwards. Hence, there is no longer any ontological difference between a pictorial space and a non-filmic space that supposedly exists independently. In Steyerl’s world, everything is an image.

Malte Hagener uses the term “media immanence” (my translation) for a media reality without an outside (such as Steyerl’s image-world). The approaches of Steyerl and Hagener are both comparable to Deleuze’s characterization of the societies of control.



Hagener's proposal is based on an "audiovisual world", where digitality<sup>6</sup> "has become so pervasive and omnipresent in our environment at the beginning of the 21<sup>st</sup> century that there is no longer an outside, no place where one could escape visual media" (2011: 52; my translation). Florian Krautkrämer develops this concept further in terms of a "post-cinematic media immanence", which implies that the outside of an image would again be saturated with pictures (2013: 114). Krautkrämer reflects on this condition using the example of cell phone videos. For Krautkrämer, there have always been forms that blur the boundaries towards reality. According to him, the documentary film, for example, struggles to distinguish between what belongs to a (diegetically) medialized reality and what does not (2013: 114, 119). Cellphone footage further complicates the question of an extra/intradiegetic outside. First of all, cellphone footage has to be thought in relation to a whole media network. What is characteristic about it is the fact that it is distributed mostly via the Internet. Its use therefore is not definitive or fully predictable (Krautkrämer 2013: 116). Thus, there is no clear outside of the cellphone image, if, as Krautkrämer suggests, the genuine outside of an image – the place which will not become visible, even if its frame expands and expands – is its reception. Receiving an image means that it is turned into a closed self-contained entity that has a rigid border to that which it is not (Krautkrämer 2013: 125-26). Krautkrämer now suggests that the outside of an image should no longer be located in the space the image is received in, because this reality is today also inflected by images through the use of the cellphone, which produces images in the same way as they are received: a look 'behind the camera' is a step in front of the display. Krautkrämer uses this example to propose that image processing, i.e. post-production, should be understood as the 'new' outside: "It is the work with and on the picture in a space that is no longer contained in these pictures themselves" (2013: 125-26; my translation). This also implies a further development in the way images are received and perceived. If one follows Krautkrämer, images are no longer 'only' seen but processed and therefore modified right away, so that there is no absolute closure anymore.

What can be recognized here is that post-production does not veil or abandon reality but rather potentiates it. If images are no longer looked at as intact objects but are always processed, modified and therefore delivered and distributed as re-formatted images, then mediality accumulates more and more. One can also observe this in the described scene from Steyerl's video. Here, different modulations of reality interlace: one could say, in Steyerl's words, that "too much world" (2013b) is revealed through the aggregation of a rendered computer world, as a pixelated Google Earth world, as a space on the computer screen, a post/production-world on and in front of the green screen that is inhabited by post-produced figures. Especially the green screen 'compacts' these

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<sup>6</sup> Hagener writes about cinema and audiovisuality. But he does so facing the ubiquity of digital media, which brings him to the same question Deleuze poses: what happens to cinema when digital media comes into play?



different layers of reality. A normal screen allows the viewer to take a look at a sealed representation of reality. The green screen not only reproduces but post-produces what is represented. It is a surface that insists on the further processing of images. It opens up the image frame and in it accomplishes the piling of different layers of reality. For Steyerl, reality and digital images therefore post-produce each other. For her, “too much world” calls for post-production, which then obtains an epistemological function:

The tools of postproduction: editing, color correction, filtering, cutting, and so on are not aimed at achieving representation. They have become means of creation, not only of images but also of the world in their wake. One possible reason: with digital proliferation of all sorts of imagery, suddenly too much world became available. (Steyerl 2013b)

The media artist goes so far as to say that reality cannot be understood at all without taking cinema, photography, 3D graphics, animation, etc. into account. In order to find one’s way in a “too much world” situation, this world must itself be understood as post-produced: “Reality itself is postproduced and scripted, affect rendered as after-effect” (Steyerl 2013b).

Through digital veiling and camouflage, Steyerl hides her own face and other faces, using green screens and the post-production practice of chroma keying. Steyerl makes use of these forms of post-production not to describe reality as hyper-realistic in a Baudrillardian sense. She also does not use post-production to unmask reality or a post-produced mediality as manipulation. On the contrary, post-production helps to critically question the relationship between reality and digital imagery. The possibility to become invisible provides epistemological purposes and constitutes subjectivity. Post-production therefore has an activist component in Steyerl’s work: forms of becoming invisible are tested through the digital processes of image processing. Steyerl’s tutorial uses post-productive techniques to become invisible in a modulating, granulating, liquid, dissolving, visualized reality. The ability to modulate, which equally applies to the image, reality and its further processing, should be identified as a potential counterstrategy against power, control mechanisms and surveillance dispositifs. In the tutorial, ways of dealing with images (filtering, swiping, scaling, zooming) are equally protection from scopophilia and post-production manipulation. The strategies of becoming invisible proposed by Steyerl in “How Not to Be Seen” – through the use of manipulative equipment (e.g. green screens) that hides reality or through potentially highly-restrictive, politically repressive instruments (e.g. burkas) – thus reevaluate the ways of making something or somebody in/visible. Steyerl’s aim is to establish strategies that make use of high-resolution to subvert the hegemonic power structures that are based on high-resolution. The video itself is produced in HD and displays its opaque surface in intense colors, sharp, well illuminated, glossy and glittering. At the same time, the HD images are re-evaluated through their post-production, brought into other resolution stages, and



are thus not only the object of a critique of opaque image surfaces, but also the instrument of this critical reflection.

The post-productive entanglement of reality and mediality should therefore not be understood as hyper-realistically glorifying, but about recognizing it as ‘normal’, ‘dirty’, ‘boring’ and above all as a possibility for subverting dominant structures. In addition to its artistic and political usage, post-production can certainly be recognized as a universal, ubiquitous form of dealing with digital imagery. Even if not always in the reflective, critical way illustrated here, digital images are frequently not just passively perceived, but actively filtered, described, tagged, compressed, cut and re-colored. Following Michel de Certeau, these post-production potentials could be regarded as an “entirely different kind of production, called ‘consumption’” (1984: 32). For de Certeau, this form of production “insinuates itself everywhere, silently and almost invisibly, because it does not manifest itself through its own products, but rather through its ways of using the products imposed by a dominant economic order” (1984: xii-xiii). De Certeau’s argument queries the classical concept of production, as well as received notions of reception or consumption:

For example, the analysis of the images broadcast by television (representation) and of the time spent watching television (behavior) should be complemented by a study of what the cultural consumer ‘makes’ or ‘does’ during this time and with these images. (de Certeau 1984: xii)

De Certeau calls these practices “silent production” (1984: xxi). They become entangled in the tightly meshed grid of production, change shape and, since they are “blending in with their surroundings[,] [...] disappear into the colonizing organization whose products leave no room where the consumers can mark their activity” (de Certeau 1984: 32).

Steyerl too thinks about a form of “mass postproduction” and “crowd-creativity”: “image production moves way beyond the confines of specialised fields” (2013b). The character of the tutorial, the glossy but also trashy aesthetics and the tools implemented in “How Not to Be Seen” are thus no longer connected to a high-end production logic in which post-production is exclusively used for the creation of special effects or digital intermediates for large film productions, like the ones associated with David Fincher discussed earlier. In Steyerl’s “too much world”, high-resolution images and post-production practices no longer only occur in Hollywood studios. As I argued with reference to Rothöhler’s concept of “Counter-High-Definition-Cinema”, the HD format and its potential to be modified and re-formatted makes possible a democratizing and empowering confrontation with and through digital imagery in a “too much world” situation.

This idea can be developed further. A design master’s program of the Sandberg Institute of the Gerrit Rietveld Academie in Amsterdam even proclaims HD as the standard format of communication in the 21<sup>st</sup> century:



In recent years, high-definition video has democratised as a medium. Online platforms have lowered the cost of uploading and distributing films to zero. Social media are dominated by streaming video. Today, anyone with a smartphone has a movie camera at their disposal. It is now completely natural to think, sketch, and communicate in video. HD is the new A4 (Sandberg Institute 2017: n.p.).

In order to establish a counterweight to “platform capitalism, a post-truth politics and the rise of neo-fascism”, the master program seeks to assume responsibility for “commissioning, streaming and distributing counter-narratives created by underrepresented voices” – with the help of HD. When students of the program “operate as a renegade production studio” (Sandberg Institute 2017: n.p.), the ‘material means’ for their critique of and reflection on digital image phenomena is the same as its object. HD is both a space for thought and a surface for critique. Similar to a white DIN A4 sheet, HD oscillates between, on the one hand, its blankness and supposed neutrality, which manifests itself as a space for something new, and, on the other hand, its display of an abundance of standardization registers that prevent content from reaching beyond ‘edges’ or resolution limits.

HD can be regarded as the technological precondition for the ability to ‘open up’ and modify dense images. High-resolution should not be understood in terms of a fixed, ontologically bound or institutionally framed media aesthetics (or in the sense of a standard dispositive or a finished image product) but rather needs to be addressed via (resolution) fluctuations, modifications and variations. According to Steyerl, HD and the post-productive potential it offers is a ‘tool’ to orient oneself in an exhausting, chaotic, hyper-medialized reality. Without post-productive interventions, one could conclude with a laconic quote from the artist that this “too much world” would be perceptively and epistemologically inaccessible and incommensurable for the human vision: “Not seeing anything intelligible is the new normal” (Steyerl 2017: 47).

## **5. Post-Production to Sue, to Demand Justice, to Counter-Investigate: Forensic Architecture**

That there is something below the HD resolution threshold is not only demonstrated by Steyerl’s quote above and in her video tutorial. The work of the artist, journalist and activist collective Forensic Architecture also embraces a critical use of images and the forms of post-production. The theme of “How Not to Be Seen” is here politically converted into the question of what remains invisible when resolution is used as a tool of power. Using image processing and computer graphic analyses, the research agency explicitly interrogates digital material, especially videos and photographs, with regard to its political restrictions in terms of their (high) resolution (Keenan 2014: 51). Roland Meyer even considers the question of resolution limits to be constitutive for the self-



understanding of the work of Forensic Architecture (2017). Eyal Weizman, head of the research agency, speaks of “violence at the threshold of detectability” (2015), suggesting that image resolution is interlinked with political invisibilities and marginalization. The collective’s work is aimed at revealing and reconstructing human rights disasters, state violence and humanitarian catastrophes. Moreover, its purpose is the presentation of counter-evidence, meaning not only the documentation of crimes, but also the establishment of a legal basis for human rights activism through media and especially image processing. In cooperation with NGOs, but also with (inter-)governmental organizations, Forensic Architecture attempts to combat structural violence inherent in media resolution limits by using post-production tools.

For example, the collective was hired by the UN Special Rapporteurs to investigate drone attacks in Pakistan. Here, the postulate from Steyerl’s “How Not to Be Seen” – “Resolution determines visibility. Whatever is not captured by resolution is not visible” – becomes a demarcation line that threatens the very existence of a person. According to Weizman, the resolution of the satellite images is not a result of media technology, but of power politics. The resolution limit for publicly accessible satellite images, as they can be viewed via Google Earth, was half a meter in 2014 (Weizman 2015: n.p.). A pixel measuring 50 x 50 centimeters corresponds to the human body when viewed from above. On the one hand, this limit can serve to protect privacy and personal rights. On the other hand, the resolution threshold is a veritable last judgement when one realizes, following Weizman, what remains hidden below the threshold. If people remain invisible on satellite views, so does their extinction. The traces of drone attacks appear in the pictures as “nothing more than a slight color variation, a single darker pixel, perhaps” (Weizman 2015: n.p.). Weizman emphasizes that the calibration of optical drone technology is geared to the human body. Drones are explicitly designed to kill individuals. They do not destroy infrastructures or strategically important points:

But identifying the human body is the very purpose of drone vision, whose function is ultimately the targeting of individuals. Drone warfare is about the human figure, and this is, as we have seen, precisely the opposite of what publicly available satellite images are designed to offer. [...] Drone strikes are executed at a significantly higher resolution than the one at which the damage they create can be captured in satellite photographs. (Weizman 2014b: 372)

Weizman recognizes an inversion of “one of the foundational principles of forensics, namely that the crime’s investigator should be able to see more, using better optics or in better resolution, than the perpetrators of the crime” (2014b: 372). Thus, Meyer bases the activism of Forensic Architecture on these “asymmetries of resolution” (2017)<sup>7</sup>, which are countered by the methods of post-production. Weizman points out that a power gradient can be deduced from resolution, where “usually [...] state agencies [...]

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<sup>7</sup> All translations from Meyer’s article are my own.



investigate individuals or criminal organizations, which is why the better resources and optics are on the side of the investigators”. He argues further: “In our case, however, it is state agencies that do the killings” (2014b: 372).

As a counter-forensic image strategy, Forensic Architecture relies on the condition of “too much world” in Steyerl’s sense as well. Conflicts and violence are currently taking place in “densely populated urban spaces”, as Meyer (2017: 71) explains. Thus, it can be assumed that an “event is registered by a multitude of sensors: architecture, as an inscription surface of material traces, can be such a sensor, as can the masses of digital recording devices, cameras and smartphones that accompany everyday urban life” (Meyer 2017: 71). Even if the density of mobile devices is not very high, in less “media-saturated environments” (Meyer 2017: 71) (such as in the tribal areas of northwestern Pakistan, a remote province that became the main target of the CIA’s drone attacks), although there exist only very few recordings, they can nevertheless be disseminated and shared, and thus, by the means of post-production, become an instructive piece of evidence (Forensic Architecture 2013). Examples such as the drone attack in Datta Khel in North Waziristan therefore indicate a “too much world” situation. Areas that supposedly lie beyond the resolution that turns the world into a picture can nevertheless be grasped in pixelated form. The few images potentiate their resolving power and visibility through post-production processes, their distribution and through finding their way into the “assemblages of evidence” (Meyer 2017: 72) – collections of pixels, as it were, created by Forensic Architecture, which compete with the high-resolution supremacy of dominant image providers, such as the state and its media outlets. Resolution has to be understood as a potential to “arrange, process and cross-reference that material” (Forensic Architecture 2019: n.p.). Forensic Architecture, by means of post-production, establishes a so called “image-data complex [...], an arrangement of individual pieces of evidence within a digital architectural model [...]. The models themselves then become databases that allow our researchers to navigate between multiple sources of evidence” (Forensic Architecture 2019: n.p.). Here, the capturing principle proposed by Agre can again be recognized. Evidence arises from the navigation in and the interpretation of vast resources of data.

For Forensic Architecture, resolution even substitutes physical presence, as in the film and installation “Resolution 978HD” (Abu Hamdan et al. 2014). This work is dedicated to the genocide trial of François Bazaramba, a Rwandan national, which took place in a district court of Porvoo, Finland. Forensic Architecture describes the Bazaramba trial as a “unique example of de-centered legal process”:

In an unusual geographical inversion, the Finnish court moved to undertake proceedings in Rwanda and Tanzania, where witnesses were heard, while Bazaramba was not allowed to leave Finnish soil. Legal proceedings then had to be transmitted



to and from Bazaramba’s Helsinki prison cell via Skype and other video-conferencing technologies. (Abu Hamdan et al. 2014: 326)

The remoteness of the juridical infrastructure transformed the legal principle of “habeas corpus” in terms of the physics and materiality of mediality. The legally necessary presence of the accused to register his physical reactions, his facial expressions, etc. was replaced by medial properties, more precisely, the “bandwidth, resolution, and automatic light detectors” (Weizman 2014a: 21). For Forensic Architecture, the juridical use of digital imagery “reconfigured the space of law and established an unexpected connection between peripheries” (Abu Hamdan et al. 2014: 326).

In this context, Thomas Keenan, a member of Forensic Architecture, makes the following media-theoretical argument: “The medium on which the trace is registered is not an entirely neutral or passive one; it has a grain and a resolution, it can record some things and not others” (2014: 41). Keenan sees his practice as a means to acknowledge the medial characteristics of power instruments: “they [the medial traces] are mute witnesses, and their ‘language’ is not always – or ever – unequivocal; they need interpreters, translators” (2014: 41). Therefore, as Meyer points out, the forensicists acquire “huge [...] quantities of traces left behind by an event in physical and digital spaces” and thus form a “common frame of reference” anchored in the most diverse source material which can be constructed as evidence: “Instead of the single image, in which the threshold of recognizability coincides with the limits of dissolution, such extensive image archives and source collections take their place” (2017: 72). As Meyer demonstrates, the post-productive counter strategies of Forensic Architecture include photographic as well as computer-generated graphic material: “Positions of virtual cameras and calculated trajectories of projectiles are synchronized with photographic bodies in space, virtual models of light conditions and cloud formations are compared with the available visual image information” (2017: 73). Despite the supposedly low resolution of each individual piece of evidence, the technical enhancement of the image resources through post-production goes hand in hand with the increase of evidence. In addition to the political agenda of Forensic Architecture, their post-production image practice therefore also raises the question of “how the potential information content of technical images can be exploited to the maximum” (Meyer 2017: 70). Forensic Architecture makes it clear that passive perception – seeing – would not offer any evidence. Justice under “too much world” conditions is based on the active handling and construction, that is, on the post-production and re-formatting of images (Weizman 2018: 100).



## 6. The Post in Postscript

The two examples – Steyerl’s video tutorial and Forensic Architecture’s investigations – illustrate that modification and variation, which Deleuze identifies as part of the power structures in an information-saturated world, may well have counter-strategic political potential. Data-based media phenomena depend on re-interpretations and selective re-formatting. On the one hand, this material condition can stimulate workflow-oriented, post-Fordist processes of production. On the other hand, the modifiable and variable materiality of the digital can be understood as incomplete and processable in an activist sense, amenable to the post-production of counter-meanings. This argument can be related to the processual thinking that characterizes Deleuze’s philosophy in general. Deleuze’s thinking famously begins ‘from the middle’. He resists transcendent beginnings and boycotts the completed. For him, repetitions and methods of differentiation are of the utmost importance. Against this backdrop, I will now, in conclusion, reflect on the “Post” in Deleuze’s “Postscript”.

As Friedrich Balke explains, the postscript is in fact an appendix to Deleuze’s philosophical work on the fold (Balke 2018: 215). Balke argues that the concept of the “objectile”, which is developed in *The Fold*, is actualized in Deleuze’s ideas about modification and variation in the “Postscript on the Societies of Control”. The objectile blurs the difference between subject and object (Deleuze 1993: 20). Balke reads this blurring as a sign of “the overall medialization of technical objects” that is characteristic of the information society (2018: 216; my translation). The process of medialization endows things with qualities that were considered to be reserved for so-called subjects, i.e. humans. Medialized objects do not have a stable form anymore. Being continuously re-formatted, they are part of the infinite production (or one could say: post-production) of any given object. Balke points out that Deleuze’s notion of the “invention of the Baroque” resonates with this line of thought.

Balke’s interpretation of the “Post” in “Postscript” not only reveals another example for thinking in terms of post-production. It also marks Deleuze’s philosophical practice itself as a processual form, as a re-formatting of thoughts: from cinema, to the Baroque, to the information society. All of these contexts can be thought of in terms of modification and variation, and they themselves modify and vary in Deleuze’s database of thoughts. Consequently, philosophical texts are not finished but are re-thought, re-formatted and re-written – as for example in the case of *Proust and Signs* (Deleuze 2000). Deleuze began questioning parts of the book, which was published in 1964, after his first encounter with Guattari. In 1970, Deleuze added an extra chapter in which he challenges his initial ideas so that the book’s second part reads like a revision of its beginning. In the middle of the text, the book thus begins for a second time, to the effect that this particular form can be read as a “reparative confrontation with the existing”, as



Marie-Claire Ropars-Wuilleumier notes in relation to Deleuze's books on Proust and cinema (1999: 259-69). Ropars-Wuilleumier suggests that the structure of the cinema books is comparable to that of *Proust and Sings*. The second book, *The Time-Image*, could then be understood as the real beginning, as it retroactively reveals the "'truth' of the cinematographic images in general and thus also of the movement-image" (Ropars-Wuilleumier 1999: 259; my translation), which comes historically before the time-image. In this context, Ropars-Wuilleumier speaks of a superimposition: "a retrospective revelation that is in need of an increase in knowledge in order to promote and reveal fundamental truths" (1999: 259; my translation).

The most prominent example of an unfinished work is the colossal text assemblage *A Thousand Plateaus*, composed together with Félix Guattari (1987), which exhibits a rhizomatic structure, offering a wide variety of entrances and exits from and into the text, and consists of a dense network of thoughts. Here, too, the philosophical practice of post-production is evident, as the reader navigates through the concepts Deleuze and Guattari offer like forms of raw data.

In conclusion, one could say that Deleuze's philosophical thinking itself has to be understood as a higher resolved image, an HD database, which has to be post-produced, re-addressed and re-read. From this point of view, modulation and variation are not only part of hegemonic forms of power and control but also offer potentials for resistance. Like databases, philosophical thoughts too can be tested by relating them to different, permanently changing questions they need to respond to. As I have tried to demonstrate, HD imagery, which relies on its re-formatting and post-production, could be understood as a model as well as a means for restoring a 'belief in this world' – the reconstitution of the "link between man and the world" (Deleuze 1997: 171-72). While Deleuze assigned this role to modern cinema, it is arguably assumed by HD imagery under the changed conditions of a new media regime based on information and data.

The value of Deleuze's text on the societies of control, then, lies not only in its anticipation, and maybe warning, of contemporary mechanisms of power. Today, it also finds its actualization in the appropriation and re-evaluation of the structures that Deleuze describes. In a sense, the practice of modulation that Deleuze, on the one hand, rates negatively and, on the other, uses productively as a method in his writing has become ubiquitous under contemporary medial circumstances. But in response to the question that Deleuze refused to answer at the end of the cinema books (and which was posed at the beginning of this article), one could say that digital and information-based images also found ways to express "a powerful, obscure, condensed will to art" (Deleuze 1997: 266) in the struggle with informatics. This is what my article sought to demonstrate by examining such counter-practices and appropriations as those of Hito Steyerl and the Forensic Architecture collective.



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