The Status of the Photographic Image in Post Media Cultural Production

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Supervisor: Dr. Joyce Goggin

Secondary reader: Dr. J.A.A. Simons

University of Amsterdam

Martijn Dorresteijn

10014403

martijn@martijndorresteijn.com

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1 Introduction

The praxis and technology of photography have seen dramatic transformations over the last century. The most obvious and eye-catching of these transformations have taken place in the last decade of the 20th century, and mark the shift from analogue to digital photography. Yet another shift is coming into focus all over the web, a shift that was initiated a few years ago with the introduction of the iPhone, and smartphones in general. These mobile devices are much more than just phones, they are communication devices that connect us to the internet, but they are also cameras, personal assistants, hand-held computers that run a variety of applications; they connect us to clouds, store our data and allow us to make the occasional phone call. Social networking platforms such as Facebook and Flickr are dependent on users sharing as much data as possible, since every (re)posted piece of data represents market value for their advertisers. The smartphone has made photography ubiquitous and this process has been intensified by social networking sites that enable users to store and share media in public clouds.

Everyone is now a photographer, or so it seems. The iPhone 4S comes with a built-in 8 megapixel camera and a set of tools for making simple automatic adjustments such as red-eye reduction and filters that sharpen blurry images. Popular iPhone apps such as Hipstamatic and Instagram allow users to extend the possibilities of their mobile camera and modify their pictures on the fly, with a range of effects that remediate old-fashioned analogue photography as well as professional image editing desktop applications such as Adobe Photoshop. The distinction between professional and amateur has blurred and given rise to the so-called pro-am generation, or digital natives who grow up playing and working with semi-professional tools that are compliant to industry standards. The images we produce, consume and share on a day-to-day basis are reshaping a major part of our collective visual culture. Some nuance is added to this claim by Lev Manovich in 'The Practice of Everyday (Media) Life' (2008a). Manovich examines the shift from media to social media and its implications for culture in general and professional art, and observes two trends. First, there is a gradual shift from the majority of Internet users accessing professional content to the majority of users accessing content produced by other non-professional users. Second, a shift from the 1990s web that functioned as a publishing medium towards the many-to-many communication medium it has

evolved in since the concept Web 2.0 was introduced by Tim O'Reilly. Statistics show that in 2007 a mere 0.5 - 1.5% of users contribute content. The rest consumes. Professional content still dominates. However, Manovich contends the general trend is an increasing use of social media and indeed the numbers are jaw dropping. Presently, Facebook has over 900 million registered users, and half of these are mobile users. 250 million pictures are uploaded to Facebook daily[1]. But how to interpret these statistics, Manovich asks? What are the relative weights of mass-media and alternative sources in contemporary cultural production? These observations raise a number of pressing questions, such as what cultural position the digital photographic image holds in contemporary networked society? What, moreover, is the current status of the photographic image in post-media cultural production?

Because photography is a social act that is practiced by almost everyone since the beginning of the 20th century, it seems relevant to assess its roots as well as its present status. It is a highly recognizable form of media practice that is imbibed with a sense of aliveness, however ephemeral. Photography has shaped and recorded history at the same time. André Bazin described photography as an embalmer of time, leaving behind traces of the real (1960). In *Camera Lucida* (1981) Roland Barthes reflected his thoughts and feelings on pictures of loved ones as substitutes for memories, but also how pictures always remind us of the inevitability of death and our own mortality.

Through the decades photography has been the eye of modernity and has many different uses as hobby, or art, commercial practice, scientific and forensic documentation, or educational, institutional, judicial tool. The rise of digital imaging has put many of these uses into question. This Master thesis will focus on the implications of transformations in practice and theory of photography. An assessment of the relative weight and cultural position the photographic image holds in networked society. Is the theoretical framework of post-media useful to better understand the recent transformations and their impact on cultural production? What is the status of the photographic image in post-media cultural production?

[1] http://www.socialnetworkingwatch.com/2012/04/significant-social-media-facts.html

1.1 From Instamatic to Instagram

A short history or media archeology of photography without delving into too many technical details is useful for placing various theoretical reflections on the topic in a comprehensible and chronological order. The concept of the photographic camera has its roots in antiquity (Vickers 2006). As early as the 5th and 4th centuries BC, Chinese and Greek philosophers and mathematicians described the *camera obscura* and the pinhole camera in their experimental writings[2]. During the Renaissance the *camera obscura* was first used to reproduce a scene from reality and to capture it on a surface to be traced as a drawing. The concept proved instrumental for the development of perspective painting.

The photochemical effect that light has on certain silver compounds was discovered at the end of the 17th century and later the automation of the act of capturing light by chemical process was developed from the 1820s to the 1840s. Several experiments conducted in this period by Joseph Nicéphore Niépce, Louis Daguerre and Henry Fox Talbot, led to the birth of traditional photography. The term photography was coined by Sir John Frederick William Herschel in 1839, meaning to write with light.

This first period of traditional photography is marked by many experiments with different chemical compounds and surface materials, the daguerrotype and the calotype being the best-known outcomes of these experiments. Fox Talbot's calotype, the first to create negative images, would form the basis for the standard negative film as further developed by George Eastman in the 1880s. The first photographs were monochrome, and the black and white process remained popular for a long time because of its inexpensive nature and classic look. However, these photographs are not completely black and white, and depending on the process they contain different hues of blue or brown. Experiments with color photography start around the 1860s. James Clerk Maxwell developed the three-color-seperation principle, recording three separate monochrome images through red, green and blue filters. Because of the long exposure time (hours if not days) and the difficulty of fixing the image, it took until 1907 before the first commercially successful color process was introduced by the Lumière brothers, which they called *Autochrome*. In 1935 Kodak released

[2] http://www.historiccamera.com/cgi-bin/librarium/pm.cgi?action=display&login=camera_obscura
http://en.wikipedia.org/wiki/Camera_obscura

Kodachrome, the first 'monopack' color film that captured the color components in a multi-layer emulsion that did not require the elaborate reversal processing methods used by Autochrome. *Agfacolor Nue* was introduced in 1936, and used a structure similar to Kodachrome, which further simplified processing. The black and white process remained popular long after the establishment of color photography because of its inexpensive nature and classic look.

The first experiments with stereoscopy were already conducted in 1838, presenting dual 2D images which, when superimposed, created the perception of 3D depth. During these first decades of experimentation with photography, stereoscopy was a highly popular form of entertainment for the general public. Full-spectrum photography was developed in the 1950s and allowed the capturing of ultraviolet and infrared light that has since been utilized by artists and scientists alike to create images of realities that cannot be seen by the naked human eye and which previously were only used to support scientific theory.

The first cheap and easy to use amateur camera was the Brownie, released by Eastman Kodak in 1900, accompanied by the slogan "You push the button, we do the rest". Costing only $1, the Brownie quickly gained mass popularity and introduced the term 'snapshot' to the general public. It employed a small lens with a fixed aperture and shutter speed, and used 117 roll film. Kodak released the successor to the Brownie in 1963, the Instamatic camera, also an inexpensive point-and-shoot camera that was highly successful. It used easy-load film cartridges with Kodak's new 126 film format that made it possible to manufacture the camera at minimum cost. The instant success of the Instamatic series and consequently the 126 film format ensured that other camera manufacturers followed suit in using the same film format.

In 1947, Polaroid introduced the Land camera, named after its inventor Edwin Land. These instant cameras with self-developing film where made commercially available in 1948. In 1963 the first color film was introduced for the Land camera, although it took almost ten more years to make color photography with Polaroid Land cameras as easy as pressing a button and shaking the picture into being. The popularity of these early compact cameras shows how photography and the production of images came within the reach of every one, and was no longer the exclusive realm of artists, scientists and other professionals. Amateur photography dramatically changed the way we look at pictures and the meaning they convey. It dramatically changed our view of art, history and everyday life.

Digital photography first saw the light of day in 1975. As a technical experiment Steve Sasson, engineer at Eastman Kodak, used CCD image sensor chips to capture a 0.01 megapixel image. In 1991, Kodak introduced the Digital Camera System (DCS) that produced 1.3 megapixel images, however, this camera was still too expensive, even for professional photographers. Sony introduced their Magnetic Video Camera (Mavica) model line in 1981 as the first electronic still camera. It made use of a CCD chip that recorded analogue images until 1997, when Sony developed the capability to record digital images. The very first consumer digital camera was produced by Apple and Kodak in 1994, and was named the Apple Quicktake 100. This is the moment when William Mitchell coined the term “post-photography”, as digital imaging displaced traditional photography and the production of reproduction was redefined.

Experiments with cameras that have communication capabilities were conducted in the 1990s by several companies such as Apple, Canon, Kodak and Olympus. The first camera phone is introduced in 1997. The less energy demanding CMOS active pixel sensor allows the construction in the small housing of a phone. Ericcson developed the first smartphone as a concept model by in 1997 and released it on the market in 2000. It combined the capabilities of a mobile phone with a personal digital assistant. In the same year Nokia released a smartphone model, the Communicator, which combined a cameraphone with Wi-Fi connectivity. These early models all suffer from low quality, low resolution, shutter lag and even worse results in situations with dim light.

The following decade was characterized by exponential technological change. Developments in the field of information and communication technologies such as the PC, the Internet, Web 2.0, imaging software, consumer cameras and mobile media devices (previously known as cellular phones) coalesced at that time into an expanding media ecology that now envelops our everyday work, play and lives at increasingly intricate levels. The emergence of social media platforms set in motion by the introduction of weblogs, LiveJournal, MSN, MySpace, Flickr, Youtube, Twitter, Facebook, Google+, 4chan, Tumblr, Pinterest and Instagram has seen dramatic changes in the way we communicate through the use of these new media technologies. Everyday users have become cultural media producers in their own right. A new wave of amateur photography is instigated by the powerful combination of these platforms as well as the smartphone.

From 2000 on almost all analogue camera and film manufacturers have made the transition to digital with varying success. For example, the rapid reduction of film camera output has driven both Polaroid and Eastman Kodak into bankruptcy. At the same time, Nokia took over the position of leading camera manufacturer in 2005. Apple introduced the iPhone in 2007 as a high end smartphone with multi-touch screen, a web browser and a collection of native applications. In 2008, the second generation iPhone was released together with the App Store. By this time, the iPhone is the most widely used 'camera' on Flickr. Instagram is one of the most popular social photography apps available for the iPhone since its release in 2010 and for Android devices in 2012. It currently has a growing userbase of over 50 million users and was Facebooks largest acquisition to date in April 2012. In 2011 Fujifilm released their Instax compact camera models, combining self-developing film reminiscent of Polaroid with consumer digital camera technologies. While analogue enthousiasts are trying to keep the Polaroid way of seeing alive by means of the Impossible Project[3], the title of this venture leaves little to the imagination.

However, while one might say that analogue photography is as good as dead, one could equally argue that this does not mean that photography in general is dead or that the legacy of analogue photography is immediately forgotten. Indeed, photography today seems more alive than ever. Whether it is called social photography, mobile photography, or even iPhoneography, the smartphone has introduced a new form of ephemeral or everyday aesthetics to the practice of photography, relying heavily on remediations of old media as well as new developments in digital imaging. The camera phone can produce and distribute photographic images within seconds. It provides new opportunities for personal expression and new forms of citizen journalism. User generated content and folksonomic practices such as tagging pictures create market value as well as community value. Cultural production today is a collaborative, participatory, and interactive experience.

[3] http://www.the-impossible-project.com/

1.2 Methodology

The following two parts of this thesis will consist of literary reviews. The first part will deal with critical media theory of photography and post-photography. The second part with post-media and post-Internet in relation to cultural production and aesthetics. Lastly, there will be a case study of Instagram and how this application and platform relates to the above mentioned theories of photography, post-photography and post-media.

This thesis will not contain any images for the simple reason that these would distract from the general argument and move too much in the direction of an aesthetic/cultural judgment of the particular image.

2 Media Theory of Photography

In an effort to provide an overview of critical theories of photography, this section is divided into four subsections. The first subsection will focus on the writings of Vilém Flusser, philosopher and media theorist, who analysed the nature, culture and politics of photography in a globalizing world. The second and third subsections consist of literary overviews of critical theories of analogue/pre-digital photography and of digital photography respectively. The fourth subsection will address the concept of post-photography as it emerged out of the debates concerning the impact of digital imaging technologies on photography.

2.1 Towards a Philosophy of Photography

One of the lesser-known media theorists who has written extensively on media and photography is Vilém Flusser. This Czech-born philosopher has published in several languages (mostly German) but it was not until 2000 that his collection of essays on photography, entitled *Towards a Philosophy of Photography*, was translated into English to be picked up by academia at large. Like Marshall McLuhan and Jean Baudrillard, Flusser theorizes media culture in critical discourse, focusing on the impact of media on culture.

In the introductory chapter to *Into the Universe of Technical Images* Mark Poster argues that media offer us an understanding of the process of globalization in relation to a new configuration of human-machine interactions. Poster disputes the limitations of a technological deterministic approach to media. This ontology of media oscillates between praise for the freedom of the human mind and the fear of its diminution by means of man-made tools rising up and threatening it. Another problematic aspect of this theoretical framework is the confounding of media with technology (Flusser 2011: x). Flusser argues that mechanical machines are very different from information machines, as are their implications. Mechanical (industrial) machines act on nature, whereas media machines (post-industrial) act on culture and, therefore, affect humans on a fundamentally different level. The subsequent relations between humans and these information machines are closer and more profound. In order to comprehend these relations, he argues, critical discourse needs to rid itself of out-dated frameworks and find alternative openings beyond the

binary of freedom and determinism. A new framework that would also take into account the interface between human beings and machines, as well as the extension of their interactions and the ways in which they subvert boundaries and form new domains of politics and culture is needed. Flusser stands out as a theorist who deciphered the codes of materiality disseminated under the apparatuses of the media. His philosophy of photography and the universe of technical images he describes serve as an analogy for a post-historical philosophy of human existence in the areas of politics and culture.

In the densely written essay, 'The Photograph as Post-Industrial Object: An Essay on the Ontological Standing of Photographs' (1985), Flusser sums up his findings from *Towards a Philosophy of Photography* written a year earlier. In it he describes the ontology of the photograph as sheets of paper carrying information on their surfaces, that is, post-industrial objects created by an automatic apparatus, namely the camera. Flusser foresees a future wherein all photos are images on screens, as most indeed are today; a culture of pure immaterial information in which objects will no longer occupy the center of attention. Flusser argues that this will involve a transvaluation of all associated values and, furthermore, a mutation of human existence (1985: 329).

Before arriving at this vision of a possible future Flusser analyzes how objects became cultural, industrial and finally post-industrial. The human being as subject is confronted by objects. The shock these objects pose to the reality of the subject is dealt with by injecting value into the object through work, so that by informing and shaping the object, it becomes a cultural object. The object represents data, while the cultural object represents facta. When this data-processing is done by an automatic apparatus, one may speak of industrial objects.

Modern science was born out of the dialectic between theory and praxis established in the 15th century. At this time, theory became hypothetical and praxis became experimental. Since the 18th century, modern science has been used to analyze and separate labour into two elements; one concerning the shape to be imposed on data. The second gesture of that imposition resulted in the industrial revolution. Machines and machine tools shape objects (inform data) into a new type of cultural object, namely the industrial object. Consequently, society became divided into owners of machines, makers of machines and servants of machines. Because industrial objects are more numerous and stereotypically compared with their pre-

industrial counterparts, this leads to object inflation and the progressive devaluation of cultural objects known as mass culture.

As cultural objects rapidly become cheaper and the machines to produce them become more expensive, those who own the machines hold the power of decision, and this is one of the root observations of Marxism. However, Flusser argues that if shape and value become synonymous, then the toolmakers or information programmers hold that decisive power, and information production becomes distinguishable from work. Here, information production refers to the elaboration of information to be imposed on data and work describes the imposition of information upon data. Work becomes mechanical, unworthy of human subjects and relegated to robots. On the other hand, information production and elaboration also have mechanical aspects and can be performed by artificial intelligence.

As the shock of the subject confronted by the object is centered in the apparatus, the subject programs the information to be elaborated by the apparatus. In this sense, post-industrial objects are no longer true objects but valueless supports for programmed information. Also, as human subjects are replaced by the apparatus they are no longer true subjects (Flusser 1985: 330).

Photos are a practically worthless support for information elaborated by the automatic apparatus. Flusser claims that a critical analysis of photos, a philosophy of photography, should help us better understand what exactly is going on. Unlike pre-industrial pictures such as paintings, the information in the photogrraph is contained on the surface and not in the body of the photograph. As objects, photos are worthless, since the information is stored elsewhere and easily transferable to a multiplicity of other surfaces. Furthermore, photography distinguishes itself from other print media where there is still a human subject who elaborates the information. In the case of photography, this elaboration is performed by the automatic apparatus, that is, the camera.

An apparatus is a machine that elaborates information and calculates probabilities through information theories, as opposed to processes whereby human subjects create objects through intuition. Here, Flusser notes a philosophical problem. On the one hand, nature (given objects) tends to move toward a progressive loss of information; toward an ever more probable distribution of nature's elements. On the other hand,

> [c]ulture is a store of improbable situations which humankind opposes against this mindless natural tendency toward loss of information, toward 'thermic death', toward oblivion. This is why information is synonymous with value. However, if apparatus can create information in the place of humankind, what about human commitment? What about values? (Flusser 1985: 330)

Three types of photos are distinguished by Flusser in order to tackle this philosophical conundrum. First, photos made by fully automated cameras that carry information programmed by humans and elaborated by an apparatus, second, amateur photos, and third, professional photos. This third type of photo carries information intended by the photographer, and this intention does not necessarily coincide with the intention of the subject that programmed the apparatus. Flusser is mainly interested in the second type; the amateur photo.

Flusser argues that the amateur functions as an automatic shutter release, exhausting the program of the camera by mindlessly clicking away, photographing everything in sight. The information these photos carry is not intended by either the amateur photographer or the programmed apparatus. Virtualities of the camera program are realized automatically, escaping every form of human intention. These snapshots carry little information. However, as Flusser notes, bad photos can be highly informative. This is caused by an error in the form of a deviation from the camera program. As he writes, "[a]n apparatus that has escaped from human intention, realizes all its virtualities automatically and deviates from its program by error, works like nature" (Flusser 1985: 330). The challenge is to control the apparatus, as is shown in the third type of photo.

The professional experimental photographer deviates from the camera program by intention, not by error. However, despite this intention, the photographer is still bound to the virtualities contained within the camera program. This is evidence of the inner dialectic of freedom inherent to the post-industrial future. In other words, as automatic apparatuses tend to escape their human intentions/program, human commitment becomes dedicated to the deviation from these programs and the deviation from values.

As Flusser moves his thoughts into the realm of electromagnetic photos, he distinguishes the new photo from the chemical one in three ways. 1) *It is eternal, not subjected to entropy*. Objects are bad memories as the information they carry erodes into oblivion. The electromagnetic and digital will assure that human memories and information can be stored for all eternity. 2) *It can move and produce sound*. The

new photo does away with the traditional classification of the various arts; moreover it does away with the distinction between art and science. Total art and the *Gesammtkunstwerk* are the possible exponents of a post-industrial future. 3) *It can be changed by its receiver*. Flusser claims this to be true for all electromagnetic information. However, the photo exemplifies how information abandons its material base.

The exchange of information to a dialogical form is what marks a democratic society, whereas totalitarian societies are discursive, emitting only one-way information. Flusser notes that the two overlap at the time of his writing and discourse still dominates, but the new photo will significantly change this balance. Information will be carried both ways and everybody will be able to collaborate in the elaboration (and deviation) of information, foregrounding the technical possibility of true democracy (Flusser 1985: 331).

Before discussing the emergence of the post-industrial and the digital, the following section will focus on critical theories of analogue photography. In many ways these observations will resonate with those of Flusser. However, because Flusser subscribes to the notion of the ontology of photography, it is important to assess the broader range of discourses on analogue photography that has dominated western critical theory in the predigital era of modernism.

2.2 Analogue Photography

In his seminal article 'The Work of Art in the Age of Mechanical Reproduction' (1936), Walter Benjamin addresses transformations in visual art representation amidst a rapidly developing visual culture dominated by mechanical reproduction and specifically photography. According to Benjamin, photography destroyed the cult value of art. The mechanical process of the exact reproduction of images through photography, together with the absence of a photographic original, has made a commodity of the photograph, and rendered the reproduced object worthless. Photography made it possible for everyone, and not just for the rich and privileged, to own (reproduced) works of art. This is because images no longer need the background of ritual mysticism or the cult of originality; they can be produced by any one, for whatever reason. Mechanical reproduction of images led to painting and sculpture gaining exhibition value as a new form of high art commodity. But

mechanical reproduction also destroyed the aura of the work of art, hence commodifying the image rather than rarefying it. The image circulating as a photograph, without an author, without cult value, without economic value, is infinitely reproducible, freely and publicly accessible for mass consumption, and without aura. Even if it depicts a work of art, the cult value and aura of the photograph have completely vanished in mass culture where images are merely used almost exclusively for consumption. Benjamin argues that the only value that is left for the image is the political. In this way, photography implies great democratizing potential. Given the time and place in which Benjamin wrote this article, his introduction clearly shows his Marxist perspective:

> The concepts which are introduced into the theory of art in what follows differ from the more familiar terms in that they are completely useless for the purposes of fascism. They are, on the other hand, useful for the formulation of revolutionary demands in the politics of art. (Benjamin 1)

In 'The Ontology of the Photographic Image' (1960), French film critic and theorist André Bazin argued that one of the defining characteristics in the production of art is the preservation of life by means of its representation. Realism in painting encounters the problem of combining the representation of the spiritual real and the representation of the physical real, the latter always leaning towards illusion. The inability of painting to reproduce reality and hence illusion, therefore, explains photography's success at satisfying our obsession with realism. Photography forms images automatically, supposedly without human intervention. Some nuance, however, might be added to this statement, given that human subjects select objects to be photographed, organize the composition, and then choose the lens, the aperture and shutter speed. Yet Bazin argues that this process does not play the same role as similar operations do in painting. Therefore, photography, according to Bazin, does away with the subjective human touch (and view) of the artist that is always inherently present in painting and sculpture.

Bazin further argues that the technical method of photography ensures an aesthetic experience that is closer to personal perception. It should be noted that Bazin uses the French word 'objectif', which also refers both to the camera lens as well as to the notion of objectivity, and plays with this double meaning. What Bazin describes as objective does not necessarily imply non-subjective but rather 'through

an object'. Bazin argues that the photographic image has an advantage over painting in reproducing reality because it does not create a replacement, but rather a reproduction of an object in reality, and this reproduction is often treated as a true representation of the object. The photograph, therefore, re-presents the object as it once existed in space and time. Our ambivalent fascination with the representation of reality is exemplified by the way we accept photography and film as being true and real, despite the fact that we are aware of the widespread manipulation of photographic images. Bazin concludes by arguing that the photographic image strips its object of our spiritual preconceptions, presenting it in its virginal purity.

In *Ways of Seeing*, John Berger presents a combination of text and images that takes many ideas from the afore-mentioned article by Walter Benjamin, and visualizes these ideas in a very striking way. The book consists of a collection of visual essays that were originally brought to the public in the format of an educational TV-programme produced and aired by the BBC in 1972. As Berger argues, the convention of perspective painting, unique to the European realistic art tradition from the Renaissance to the beginning of the 20th century, places the eye of the beholder at the center of the visible world. But the human eye can only be in one place at a time.

The camera changed this and presented new appearances to human vision, appearances that were previously impossible to see. What is more, images could be reproduced and travel around the world, hence with the advent of photography the visible world no longer had a single center, as the human eye dissolved and was extended and forever changed by the mechanical eye. And by this process, the way we see the visible world, the way we construct meaning and make sense of reality (and history) also changed. Berger clarifies this by quoting Russian film maker Dziga Vertov, well known for his film *Man with a Movie Camera* from 1929. This quote is worth repeating here at length, as it is compelling how Vertov places the mechanical eye of the camera at the dynamic center of a new way of seeing and experiencing the world.

> I am an eye. A mechanical eye. I, a machine, show you a world the way only I can see it. I free myself for today and forever from human immobility. I am in constant movement. […] Free from the boundaries of time and space, I co-ordinate any and all points of the universe, wherever I want them to be. My way leads towards the creation of a fresh perception of the world. Thus I explain in a new way the world unknown to you. (Vertov in Berger 1972: 10)

In *Camera Lucida* (1981), Roland Barthes asks what the uniqueness of photography's essence is. Barthes rejects classification systems that can be applied to other forms of visual representation since these systems do not take into account the uniqueness of photography. A photograph captures a unique event that can never re-occur. The photo is bound to this event--the referent--and vice versa. The referent cannot be photographed again and the photo cannot be recreated with a different referent. This realist view that the photo *is* the referent leads Barthes to conclude that it is pointless to speak of a photo as an entity apart from its referent. Barthes sees no reason to choose a particular moment or event as a referent and, therefore, photography has no meaning in and of itself and is henceforth unclassifiable.

Barthes then goes on to dismiss other theories of photography and to construct his own. Unlike these earlier theories, whether they are technical, historical, or social, Barthes focuses his realist theory on amateur photography, which is all about the referent (e.g. family snapshots). He distinguishes three activities that make up photography; taking photos, viewing photos, and being photographed. The first activity has no interest for Barthes, as he does not want to ascribe any intentionality to the photographer because this would undermine his notion of pure realism. The latter activity, being photographed, always fails, as Barthes further argues. While consciously posing, the subject tries to imitate itself. The inauthentic result coincides with the uneasiness of the subject being transformed into an object. The subject becomes a spectre, a future vision of its own inevitable death.[4]

In *On Photography* (1977) Susan Sontag published her essays on the subject of photography as a collection. In the final essay entitled 'The Image World', Sontag comes closest to an encompassing theory of photography, exploring the ramifications of photography in the real world. In the 1970s, science and humanism claimed that an objective, non-image based understanding of reality is possible. But as Sontag notes, culture is growing more dependent on images than ever, especially under the influence of mass photography. The image world created by photography has a unique set of properties that are essentially different from other forms of image-making.

A photograph is an interpretation of, as well as a trace of, reality in that it provides knowledge independent of experience. It can be used to capture, classify,

[4] It should be noted that this book is also an emotional expression of mourning; *Camera Lucida* is as much a personal reflection on the passing of Barthes' mother as a prelude to his own death.

and store information. It is a tool for analyzing behavior and provides new possibilities for control. Photographs are linked to the reality they depict and function as extensions of the subject. As such photographs possess the means to gain control over the subject. Photography also takes control of the thing photographed independent of the image-maker because it is an automatic process. This creates a new relationship between the image and reality. Sontag argues that producing and consuming images is the chief activity in modern society and that, as a consequence, we have come to prefer the image to the real thing. Moreover, our inclination now is to attribute the qualities of an image to real things. Finally, photography can be seen as a way of imprisoning reality because it implies instant access to the real. However, this capture of reality in photographs also creates distance. As she writes, "[t]o possess the world in the form of images is, precisely, to re-experience the unreality and remoteness of the real" (Sontag 164).

Sontag describes photography as a form of acquisition in several senses. It is the surrogate possession of people or objects, a way of consuming events, a substitute for experience, and a means of acquiring information. As a means of possessing reality, photography captures the past. But more than simply documenting the past, Sontag argues that photography provides a new way of dealing with the present in new means of documentation, reflection, mediation, and experiencing reality and more generally, a new way of seeing. The image world affects our experience of reality because it provides a new visual code, a grammar and ethics of seeing. Photography alters and enlarges the scope of what is worth looking at and what we have a right to observe and what serves as evidence. The tenacity of the camera's claim to credibility is difficult to overcome because photography redefines reality as exhibition items, documented records, and potential targets for surveillance. Sontag warns we must gain control over this process before it is used to control us.

For Sontag, the difference between the photographer as an individual eye and the photographer as an objective recorder is often mistakenly regarded as the source for distinguishing between photography as art and photography as document. However, as she notes, both are logical extensions of what photography means, that is, to take note(s) of everything from every possible angle. Both approaches assume that anything is potentially material for the camera. The trained eye can find beauty or interest seemingly in anything because it is "...the aestheticizing of reality that makes everything, anything, available to the camera is what also permits the co-

opting of any photograph [...] as art" (Sontag 176). On the other hand, the photograph as document treats everything as a useful object for the making of estimates, decisions and predictions. These two inherent approaches to photography, the aesthetic and the instrumental, seem to produce contradictory feelings about people and situations. Sontag argues that this contradiction of attitudes mirrors the contradiction between private and public in modern society. As an activity, picture taking prepares us to live with these contradictory attitudes: "On the one hand, cameras arm vision in the service of power – of the state, of industry, of science. On the other hand, cameras make vision expressive in that mythical space known as private life" (Sontag 177).

The effects of new camera technologies are shifting the private towards the public sphere, while the narcissistic uses of the camera make it a useful tool for self-surveillance. Sontag states that a capitalist society requires a culture based on images to, on the one hand, furnish entertainment, stimulate consumption and anesthetize the public and, on the other hand, to exploit resources, increase productivity and keep order. These needs are served and strengthened by the camera's twin capacity to both subjectify reality and to objectify reality. In short, the camera defines reality in two ways: as a spectacle for the masses, and as an object of surveillance for rulers. Sontag again stresses how this is essential to the working of advanced industrial societies. The production of images furnishes a ruling ideology, where social change is replaced by change in images. Freedom here lies in the freedom to consume a plurality of images. Free political choice becomes free economic consumption. For this to work, the unlimited production and consumption of images is required (Sontag 178).

The same logic of consumption explains the need to photograph everything. To consume means to use up since more product will be needed to replenish the desire or lust for images. First, because the possibilities of the camera are infinite this lust can never be fully satisfied and second, the photographic project is ultimately self-devouring. We consume images and images consume reality. Cameras function as the antidote as well as the disease, while cameras appropriate reality and at the same time make it obsolete. Sontag then concludes that photography has de-Platonized our understanding of reality:

> […] the force of photography comes from their [photographs] being material realities in their own right, richly informed deposits left in the wake of whatever emitted them, potent means for turning the tables on reality – for turning *it* into a shadow. (180)

Because of the reality of images as described in the above quote, Sontag claims we should apply a conservationist approach to this unlimited resource. The real world needs to include the world of images in "...an ecology not only of real things but of images as well" (Sontag 180).

While in this section I have focused on the work of Benjamin, Berger, Sontag, and others in order to assess the theoretical standing of analogue photography's truth value and its indexical relation to reality, the next section will deal with the emergence of digital technologies in the field of photographic theory and practice. Here, I will investigate whether or not the material reality that Sontag ascribes to photographs is about to transform dramatically into immaterial virtualities or what we might call shadows of shadows. In this section then, the theoretical game of pin the tail on the donkey continues with the purpose of highlighting what radical or paradigmatic shift has been affected by the development of digital photography.

2.3 Digital Photography

In the chapter 'Intention and Artifice' from *The Reconfigured Eye: Visual Truth in the Post-Photographic Era* (1992), William Mitchell examines the credibility of photography as evidence. Mitchell asks what the foundations for photographic truth claims are, and why we should be wary of them. How are these claims subverted by the emergence of digital imaging? Philosophical doctrines on the nature of meaning and truth will provide the most useful answers to these questions, according to Mitchell.

Photography provides evidence about a scene, about the way things were, and we feel that this evidence is stronger than that which any other kind of picture can provide. The presented evidence corresponds to reality, therefore the photograph must be true, as received logic has it. Evidential efficacy is often ascribed to the bond between the fleeting moment of reality and the permanent image that remains after exposure. The correspondence with reality is causally established, as a physical imprint of light on photographic emulsion.

In the previous section on analogue photography Bazin, Barthes, Berger and Sontag all wrote of the way in which the referent adheres tenaciously in the photograph. Photographs are ostensibly records of things seen and the photographer decides whether the particular object or event is worth recording. The reality effect of photography is a mechanism by means of which certain types of images come to seem more natural, and this is established by a set of conventions that condition our visual perception. For photography this leads Mitchell to "[...] the seemingly paradoxical proposition that, since photographs are very strongly linked by contiguity to the objects they portray, we should regard them not as pictures but as formulae that metonymically evoke fragments of reality" (25). As Barthes notes, realistic art such as photography often incorporates functionless details to signal that it is indeed a sample of the real. Photography supposedly always connotes the real, while the camera is a perceptual prosthesis better than the human eye, a supereye, bonding image and referent together with a kind of metaphorical superglue.

The process of photography functions without human intervention; it is automatic, physically determined, and presumably objective. Mitchell argues this automaticity accords with poststructuralist hostility to the idea of authorial control of meaning, and casts photography as another variety of automatic writing. Bazin described this as the instrumentality of a non-living agent. Photography potentially records images automatically, without the creative intervention of a human subject. The same exclusion of human intervention can be found in formal scientific discourses, hence photography is often seen as offering a way to overcome subjectivity and get at the 'real truth', and Mitchell argues that this impersonal, objective neutrality has ontological implications.

Roger Scruton distinguishes photography from fine art by pointing at the different intentional relations of the painter and the photographer to the object they depict. In photography this relation is almost entirely causal rather than intentional, however any photographer would disagree with Scruton and regard the manipulation of photographic variables as being essentially intentional. Mitchell does find Scruton's distinction between intentional and causal components to be helpful when regarding images (comparing painting and photography) on a spectrum ranging from non-algorithmic to algorithmic, whereby the former is a product of many intentional acts (by the artist) and the latter is automatically constructed and therefore provides more trustworthy evidence about what was before the imaging system.

Modern photography as an image production process stands near the algorithmic and depersonalized extreme of this spectrum. With the introduction of digital imaging all this changes. The distinction between the causal and the intentional can no longer be drawn with confidence and the digital photograph can be located at any point along the spectrum. The metaphorical superglue is wearing thin at this point and the referent has come unstuck.

> In general, if an image follows the conventions of photography and seems internally coherent, if the visual evidence that it presents supports the caption, and if we can confirm that this visual evidence is consistent with other things that we accept as knowledge within the framework of the relevant discourse, then we feel justified in the attitude that seeing is believing. But failure to satisfy anyone of these requirements motivates suspicion. (Mitchell 42)

The conditions for distinguishing between original and copy already raised questions when applied to analogue photography. One might ask, for example, if the negative is the original or is each individual print an original? The question of authenticity becomes even more problematic when dealing with digital photography, where there is no unique negative. Image files can be copied endlessly without loss of quality and the copy is only distinguishable by its date. Every copy has the potential for unlimited fleeting displays on flickering screens, and while the original file may already be deleted, its descendents live on.

Mitchell enlists the technical distinctions introduced by Nelson Goodman in *Languages of Art*, to clarify the problem of differentiating appropriately between originals and copies. First, Goodman distinguishes between one-stage and two-stage arts. Most photography, with the exception of the Polaroid snapshot, is produced in two stages and negatives are exposed, and then developed and printed, while digital images are encoded and then displayed. Secondly, Goodman distinguishes between autographic and allographic arts. The essential difference being that allographic art is specified in some definite notation system, like a musical score. Autographic works consist of analogue information that cannot be copied without introducing noise. Allographic works consist of digital information that can be copied without degradation. Digital images are (mostly) two-stage, allographic and mechanically instantiated (algorithmically interpreted) works, while image files are ephemeral and leave no trail. As he writes, “it is often impossible to establish with certainty the provenance of a digital image” (Mitchell 51).

Mitchell contends that we must abandon the traditional conception of art as stable, finished work and replace it with an art world that recognizes continual mutation. In this view, notions of the individual author's responsibility, the determination of meaning, and prestige are diminished. Furthermore, the distinction between producers and consumers of images potentially evaporates. Mitchell regards digital images neither as ritual objects nor as objects of mass consumption, but as information fragments that circulate the global networks to be received, transformed, and recombined, thereby producing new structures with their own dynamics and values. Where Benjamin claimed that mechanical image reproduction substituted exhibition value for cult value, Mitchell claims that digital replication substitutes a new kind of use value—input value—for exhibition value.

Cultural production in the age of digital replication emphasizes processability. Images do not just refer to each other, they are made from each other and "mirror-mazes of interpictorality hooked to the external physical world (at relatively few points) by moments of image capture" (Mitchell 51). Images reflect traces of other images, while the referent is lost and the self-referentiality of symbol systems runs rampant, so that the tenets of poststructuralism escalate to a new level. Subjects are now susceptible to being constructed in cyberspace.

Ethical and legal dilemmas have emerged as traditional conceptions of truth, authenticity, and originality have been challenged by digital images. Many pre-digital standards and laws seem inadequate to dealing with the implications of these new technological developments largely because digital images resist treatment as privately owned material commodities. The concepts of derivative work and fair use are also challenged. Mitchell argues the digital image is emerging as a new token in communicative and economic exchanges that is fundamentally different from (analogue) photography or painting, and as such the digital image demands new rules (Mitchell 55).

> Now there is a new post-industrial economy of images, with superimposed processes of gathering and stockpiling raw materials, extraction, manufacture, assembly, distribution and consumption. […] The entire surface of the earth has become a continuously unfolding spectacle and an object of unending, fine-grained surveillance. (Mitchell 57)

In this new economy, form has become cheaper than ever and instantly transportable. Connections between images and physical reality have become

tenuous, while images are no longer unproblematically seen as an index of visual truth. Signifiers with stable meaning and value are memories of a photographic past that is already long gone.

Benjamin's writing clearly resonates in Martin Lister's 'Photography in the Age of Electronic Imaging' from *Photography: A Critical Introduction*, wherein Lister examines the manner in which the implications of digitization for photography were initially conceived by critical theory. The production of photographic images by digital means has been possible since the early 1990s in processes in which two fundamental technological developments were involved. First, existing analogue photographs were digitized by scanners and images were registered by digital cameras, a process known as 'digital encoding', and second the ability to produce photo-realistic images and to simulate photography with computer generated graphics. As Lister argues, these developments created several new possibilities for the photographic image: The transfer of traditional photographs from their material basis to numerical values. Whereas the analogue image was fixed, the digital is mutable. Also, the registration of information received through an optical lens directly as a set of numerical values. Another innovation is the production of images that look like photographs from data and knowledge, without any direct connection to objects or events in reality. Finally, the circulation of all sorts of images as data packages through telecommunication systems (Lister 298).

A range of critical issues were raised by the emergence of digital imaging and photography, which is widely regarded as a significant historical moment for media and visual representation. This event has been compared to the invention of photography itself or the formulation of pictorial perspective during the Renaissance. Some practitioners and theorists celebrated this moment as a release from photography's constraints, while others saw the values of photography (or their theoretical reflections on photography) under threat. Two implications struck certain genres of photography to the heart. First, digitally encoded photography allows for manipulation to an unprecedented degree and photo-realistic images can be constructed by using computers, without a referent in the real world. So-called straight photography (photojournalism, documentary, surveillance, medicine, science) depends largely on photographic realism, its truth claims, and its use as evidence. Fred Ritchin, professional photographer and teacher of photojournalism felt the ethics and politics of photographic representation were threatened by the

malleability of the image that, in his view, would lead to the undermining of photography's status as inherently truthful. However, the new-found capacity to manipulate and synthesize photographic images is warmly welcomed by other genres of photography such as art, advertising and fashion photography.

The fear of the demise of photographic truth as formulated in realist theory was one of the initial responses to digital imaging. The technical basis of photography defined much of the theoretical field while the photograph was considered an index, a trace, a stencil of the real that caused it. However, as Lister and others (Batchen 2009, Manovich 2001) have noted, this indexicality only plays a small part in the construction of meaning in photographs. The ambiguous meanings of photographs have been understood to be the result of complex technological, cultural, ideological, and psychological processes. Despite indexicality only being one element in a complex of many, in early thinking about the impact of digital technologies on photography, indexicality is the quality that is most stressed in the polarized debates between old photography and new digital technologies. Lister argues that this position "...diverted attention from the whole range of decisions, conventions, codes, operations and contexts which constitute photographic meaning" (311). Martha Rosler argues that the complex history of photography shows that manipulation is integral to it, and that objective realism is not an essential quality of the medium. Photographic truth is mostly based upon a set of historically and culturally specific beliefs.

Fred Ritchin claims that the traditional manipulation of photography was held in ethical check, securing the integrity of the image. New digital technologies meant that anyone could alter the image and its meaning. The challenge posed to photography's supposed reliability is answered by Ritchin with two possible responses. His first response would be some kind of 'kite mark' for verifiable, trustworthy images or a caption that states this is a certified chemical photograph or an ethically manipulated digital photograph. Similar defensive concepts have surfaced for glossy magazines, indicating whether photographic images are photoshopped or not. This would be an exercise in redundancy, as the term glossy must be understood as essentially manipulated. Adobe Photoshop is as much a part of the advertising and fashion industries as is the use of traditional cosmetics and analogue photo-retouching. Then again, advertising and fashion photography can hardly be considered (sub)genres of straight photography. Ritchin's second solution

lies with the responsibility of the author so that truth and integrity come to rest on the conscience and reputation of the (straight) photographer (Ritchin in Lister 313).

In 'Image Simulations, Computer Manipulations: Some Considerations', Martha Rosler argues that we need to look at wider cultural factors besides new technologies, and to recognize that it is our ideas and beliefs about photography that are changing, and not its nature. She further stresses the importance of understanding straight photography or documentary and journalism as a genre with its own history, politics, and institutional frameworks which grant it special authority. Straight photography is a way of making photographs where artifice, construction and manipulation are avoided as a matter of principle. However, the act of photography remains a mediating act and it always implies making choices within a wider set of possibilities. A photograph, as Lister reminds us, will always be shaped by the intention of the photographer (314).

Rosler connects the question of objective representation to whether or not an image can be used to tell the truth about a reality that itself may be illusory. She points to the manipulative tradition of photomontage as an example of a way of using photography to dismantle appearances and getting to the social realities that lie beneath the surface. Rosler compares these political photomontages to the earliest practitioners of photography that used superimposed multiple negatives to create a "*truer truth*, closer to conceptual adequacy" (54). The identification of photography with objectivity is a modern idea, Rosler argues, and may be passing along with many other modern certainties. Therefore, the meanings of images are not determined by technologies but are rather shaped by ideas and beliefs. The questioning of photographic truth is part of the cultural delegitimization at work in industrial societies. Rosler proceeds from Guy Debord's theory of the society of the spectacle, where the cultural industries of capitalist societies have turned the look of the world, its appearance, into a commodity. This changed the status of the image dramatically, long before the emergence of digital imaging technologies (Lister 315).

In *Visual Digital Culture: Surface Play and Spectacle in New Media Genres* (2000) Andrew Darley argues that digital images draw attention to themselves as images. This skews representation in the traditional sense, as it is now more about styles, forms and genres. Darley notes that not all of contemporary visual culture is mere spectacle and sensation however, and points out that there is a much aesthetic space in mainstream visual culture that lacks traditional depth and is dominated by

surface play and endless strings of shallow quotations. This surface play manifests itself in different ways as a dimension within mass visual culture and in more localized and specific expressions that refer to the ways in which digital image making enables and stimulates the aesthetic preoccupation with signifiers and their formal arrangement. Darley refers to this as the 'culture of the copy' and cites Jameson who aptly described this as the 'age of the signifier'. Darley poses the question how digital visual culture distinguishes itself from earlier cultural and aesthetic regimes (Darley 125).

To understand this new aesthetic dimension, two concepts are highlighted by Darley that are of interest here, namely, the concepts of repetition and montage. Repetition functions as the measure of visual digital culture and is a structural concept for understanding the distinctive qualities of contemporary visual culture. Important aspects here are the new kinds and levels of technological reproducibility that are inherent to digital technology. Serial production as a new means of cultural production in the 20th century leads to more reproductions than ever before, and consequently a proliferation of signs. Likewise, the quantitative development of mass reproducibility produces mutations and qualitative effects. Enter the dominion of form and surface in mass cultural aesthetic practice (Darley 126). If anything, digital technology and social networking sites have put this kind of repetition of images in maximum overdrive.

Montage is prevalent in both analogue and digital photography, although digital technology and its potential for copying and simulation has boosted this practice in contemporary imaging. Darley distinguishes two kinds of montage; mimetic seamless montage that is undetectable by the naked human eye and the artistic tradition dating back to modernist movements such as Dada. He links these montage techniques to the dichotomy between modes of aesthetic realism used in mass culture, and the anti-realism of the modernist avant-garde. The latter technique is associated with the (re)combination or juxtaposition of diverse elements that form new images that might surprise or shock. Both forms of montage are still practiced today. We are accustomed to the kind that hides its artifice behind a veil of photorealism and we accept that as a natural part of the medium that cinema and television fundamentally depend on. At the same time, through repetition, the modernist tradition of montage, and associated concepts such as intertextual reference and self-reference, are imported into mainstream culture. However, it

remains debatable how much shock or surprise value these images have left (Darley 131).

Lister claims that too much emphasis has been placed on technological differences between the analogue and the digital as the main causal factors for breaks and ruptures in the development of photography. This has obscured important elements of continuity in cultural meaning and uses of technologies. Rather than a break between photography and the digital, we need to see how both are shaped by social and cultural forces. The difference between analogue and digital is, therefore, one factor within a larger context of continuities and transformations so that "to assess the significance of new image technologies we also have to look at how images are *used*, by whom, and for what purposes" (Lister 317).

Cultural continuity can be found in institutions and social sites where new image technologies are being applied as well as in established cultural practices which are extended and transformed through such use in news-media, art, advertising, surveillance, entertainment, education, pornography, and so on. The use of digital technology can also be seen as accelerating photographic processes by building upon and continuing the history of pre-digital photographic forms. Digital media have been celebrated for their ability to generate polysemic meanings involving participation from the viewer who has become the user. Lister argues there are two main bases for this. First, a convergence of separate media and, second, an interactive relation that has developed between the viewer and the text. This celebration implies an opposition between new and old media and frames photography as the old pure medium, as a source of singular and stable meaning. Again, it is the technological difference that is "the basis for constructing different intellectual and creative conceptions of practice, production and, in particular, in what is involved in viewing or using images" (Lister 319).

Lister does not deny that there are differences to be taken into account, however this does not imply that the convergence of older media brought about an entirely new situation. Furthermore, convergence should not be thought of as the inevitable achievement or goal of technologies. Identifying convergence and interactivity as new features of the digital is dependent on failing to take into account a number of factors. For example, digital image production draws upon codes and conventions of older media. These conventions carry ideological weight, hence Lister argues that there is the danger of uninformed use of this resource, which is critically

unaware of the politics of representation. Furthermore, the over-evaluation of digital culture obscures the power and complexity of photographic culture so that "the frequently made opposition between the photographic and the digital turns instead into a picture of the latter extending and building upon some key aspects of the former" (Lister 319).

The main difference between analogue and digital images has often been ascribed to a difference in indexical quality. The indexical nature of the chemical photograph is an important part of the 'photographic economy' and the wider scopic regime, Lister argues. Analogue photographs have long been described as footprints or stencils of the real, depicting an object that once was in direct contact with the negative through the lens, capturing the reflected light. However, this indexical quality has more to do with a sense of presence than with realism. The immateriality of digital photography problematizes this, yet, digital photography can also be indexed in a technical way, as well as in the way digital photographs are received and valued (Lister 332).

Barthes explored the reception of photography in *Camera Lucida* (1981) in order to reflect on our felt experience of images, rather than the analysis of their signifying potential. In this light, Lister argues, differences between analogue and digital photography cease to hold up importance. This is because the capacity of digital technology to mimic and simulate photography has led it to make images that share the traditional pictorial values of photography. The technical process of capturing light may be different; the resulting image looks the same. Like a photograph. Bolter and Grusin address the issue of digital photography in *Remediation: Understanding New Media* (1999), where they argue that digital photographs are often intended to be received as photographs and presented as being part of the tradition of photography (106). The authors argue that the process of capturing light is equally artificial in chemical and digital photography so that to claim that one of these types of images is more 'true' than the other is a form of cultural judgment given that the difference between analogue and digital no longer holds sway.

Manovich takes this point even further when he states that many photographs do not operate or are not used on the level of indexes, even if they in fact are indexes. Thought about in this way, the difference between painting, photography and digital imaging seems to disappear. This line of thinking, moreover, leads to yet another

criticism of earlier ideas about the revolutionary impact of the digital upon photography. Again, qualifying the degree of difference between the two, this critique flows from suspicion about arguments based upon abstract principles and technical differences and the persistent habit of inferring cultural consequences directly from technological differences (Lister 333).

In 'The Paradoxes of Digital Photography' (1995) Manovich claims that the key differences between analogue and digital photography as pointed out by Mitchell have no cultural significance in practice, despite their technical and theoretical validity. In the first case, file compression makes loss of data and degradation of the image a routine practice when files are copied and disseminated. Flawless replication of data might be possible, but in practice photographs are rarely flawless so that stating that there is no hierarchy between a digital original and its copy makes no sense. Moreover, the notion that photography offers indefinite and continuous encoding of information whereas digital images are precise and definite, is surpassed by the extremely high resolutions that scanners and digital cameras can record. The amount of information contained in these images goes far beyond that of an analogue photograph or of our cultural need for such detail. Hence, while Mitchell's argument is theoretically correct, the differences he points out do not hold up in practice. Manovich concludes by stating that "[d]igital photography simply does not exist" (1995). Finally, the third case concerning the inherent mutability of digital images as opposed to the supposed innocence of straight photography falls short of taking into consideration that there has never been one dominant way of reading photography. Moreover, digital photography does not subvert 'normal' photography because 'normal' photography never existed.

2.4 Post-Photography

> The logic of the digital photograph is one of historical continuity and discontinuity. The digital image tears apart the net of semiotic codes, modes of display, and patterns of spectatorship in modern visual culture – and, at the same time, weaves this net even stronger. The digital image annihilates photography while solidifying, glorifying and immortalizing the photographic. In short, this logic is that of photography after photography. (Manovich 1995)

As the birth of photography has been said to have marked the death of painting, so too the emergence of digital imaging is often seen as marking the end of photography as we have known it, along with our modern way of seeing. This, according to Mitchel, constitutes the beginning of a new era of post-photography (Mitchell 1992). In 'Phantasm: Digital Imaging and the Death of Photography', Geoffrey Batchen claims that changes in technology will not lead to the disappearance of photography, which has never been simply one technology. Its history shows many competing instances of technological innovation and obsolescence, none of which threatened photography as a medium. Furthermore, even if we identify photography with certain technologies, those technologies are always the embodiment of an idea, flowing from an economy of desires and concepts. Photography is the desire to orchestrate relations between concepts of nature, knowledge, time and space, representation, the observing subject and the observed object (Batchen 209).

But what about the present state of photography? Photography in the age of digitalization, prosthetic and cosmetic surgery, virtual reality, artificial intelligence, and genetic engineering, all of which are calling into question the separations between nature and culture, human and non-human, real and representation. It is impossible to know where the human ends and where the interventions begin and Batchen's radical questioning of the body and of humanness is becoming more and more enmeshed in everyday life. But when the human can no longer be clearly identified and becomes an unstable entity, then what is to remain of photography or photographic culture?

Batchen describes post-photography as an increased self-consciousness regarding the identity of photography and artists that work with photography, but from outside the medium itself. The boundary between photography and other media is porous with the consequence that photography is nowhere and everywhere. Post-photography marks the era after photography and, as photography is losing its

privileged place within modern culture, Batchen asks whether photography is dead. Photography will not disappear, Batchen argues, but dramatic changes in meaning and value do call into question the medium's significance and the result will be a largely epistemological affair (Batchen 210).

Darley examines how new technologies provide ways to combine intertextual and mimetic forms of montage into hybrid texts. The computer adds new capabilities as well as new possibilities to the practice of image manipulation given the emergence of synthetic image fabrication uncoupled from photographic recording processes. Realism may be mutating into a different phenomenon that has its foundations in simulation as well as in photorealism, and Manovich addresses this point in *The Language of New Media*. For example, degrading hyperreal CGI to match the flaws of photorealism is a technique that is widely employed in Hollywood movies. By algorithmically adding noise to perfect computer images, the images gain distinctive photographic qualities (Manovich 2001a). The photographic image in such cases is valued as the new sign of reality as it is displaced by digital technologies. Hence, while Lister and Manovich both write of digital (or synthetic) imagery as providing us with a future vision, the perfect vision of the cyborg, the downgrading of synthetic images to match photorealism shows how these new digital imaging techniques are being placed in the lasting tradition of photorealism. It also shows that hyperrealistic images are representations of a vision of a 'cyborg body to come'.

It could also be argued that the cyborg is already here and that the smart phone functions as a postmedia cybernetic device, through which the camera and the screen extend the human eye and hand, into a cyborg vision of the world where reality, photorealism and the hyperreal coalesce into realtime virtual streams of flickering signifiers. As Katherine Hayles writes in 'Virtual Bodies and Flickering Signifiers,' a chapter contained in her groundbreaking work, *How We Became Posthuman*,

> [f]oregrounding pattern and randomness, information technologies operate within a realm in which the signifier is opened to a rich internal play of difference. In informatics, the signifier can no longer be understood as a single marker, for example an ink mark on a page. Rather it exists as a flexible chain of markers bound together by the arbitrary relations specified by the relevant codes. (Hayles 31)

Manovich claims that the developments in digital imaging technologies reveal a cyborg vision that is very much in line with the cyborg described by Donna Haraway in 'A Cyborg Manifesto', and the posthuman as described by Hayles. Liberal humanism, which separates the mind from the body becomes complicated in the late 20th century, as Hayles claims, and information technology has thrown the human body into question. However, information is disembodied and cannot replace the human body but can only be incorporated into it and into the practice of human life (through media-interfaces). As media are dissolving into one another and interfacing with the human body in ever more intricate ways, our current condition is already highly posthuman and postmedia.

3 Post Media

In ‘Post-media Aesthetics’, Lev Manovich argues that during the final decades of the 20th century, a number of different cultural and technological developments have rendered the concept of the medium meaningless. This key concept of modern art has not been replaced by a typology that goes beyond this media-based classification. The assumption that organizes artistic practice and cultural production in distinct media continues to structure the organization of cultural institutions despite the fact that this assumption no longer reflects the functioning of culture.

This conceptual crisis was instigated by the development of new artistic forms in the 1960s such as assemblage, happening, installation, performance and conceptual art. The multiplicity of these forms threatened the old typology of media. This traditional typology was based on material differences, whereas new media either combine different materials arbitrarily (installation) or it dematerialized the art object (conceptual art). These new forms are not really media in the traditional sense. Yet another mutation in the concept of medium occurred when new technological forms of culture were added to the typology of artistic media such as photography, film, television and video; all of which claimed their own cultural production space in art schools and separate departments in museums. The pre-digital forms such as photography and film still made sense in the traditional typology of media, since both utilize different material bases. Photography and film also follow another fundamental distinction in traditional aesthetics in defining the typology of media; the distinction between spatial and temporal arts. The concept of the medium was, however, not necessarily threatened by adding photography and film to this traditional typology (Manovich 2001b: 2).

Television and video do not fit into the traditional typology of mediums, using the same material base (electronic signals) and the same conditions of perception. The reasons for treating them as separate media are sociological and economic. Differences in audience size, differences in mechanisms of distribution, and differences in the number of produced copies. The typology of media comes into conflict with a new set of distinctions, between art (video) and mass culture (television). Artists started using mass media for making art. In essence this meant using mass reproduction technologies for the opposite purpose of creating limited

editions, so that sociological and economic differences became the criteria for distinguishing between media.

The digital revolution of the 1980s and 1990s again threatened the traditional idea of the medium. The means of production, storage and distribution of mass media shifted to digital technology and the adoption of digital tools by artists disturbed traditional distinctions based on the material and conditions of perception, along with more recent distinctions based on distribution models, methods of reception, exhibition and commodification. On the material level, digital representation and its tools can be applied to most media. According to Manovich, this erased the differences between photography and painting. On the level of aesthetics, Manovich takes the web and the multimedia document as a new standard in communication with the result that the traditional link between the identity of an art object and its medium is broken. On the level of distribution, the web has dissolved the difference between mass and limited distribution, and Manovich claims this shows how the traditional concept of medium does not work in relation to post-digital, post-net culture. However, despite this inadequacy to describe contemporary cultural reality, medium-specificity persists through inertia. Rather than replacing the conceptual system of media, we keep adding categories or genres, substituting the traditional distinguishing factor of the material base for new technologies (Manovich 2001b: 4).

3.1 Post Media Aesthetics

A particular direction for a conceptual system that could replace the worn out discourse of media is suggested by Manovich. This involves substituting the concept of medium with new concepts from computer and net culture, both literally (computer-mediated) and metaphorically (pre-digital), post-media aesthetics.

Manovich outlines what post-media aesthetics may look like: 1. It needs categories that can describe how a cultural object organizes data and how it structures the user's experience of this data. 2. These categories should not be tied to any particular storage or communication media. 3. Post-media aesthetics should adopt the new concepts, metaphors and operations of a computer and network era. Manovich suggests that we can use these concepts when talking about post-digital, post-net culture, and when discussing pre-digital culture. In order to understand old

and new culture in a continuum, however, we must first conflate them. This is an ethical move, Manovich contends, as new culture will be enriched through the use of the aesthetic techniques of old, and old culture will be made comprehensible to new generations by using familiar terms from the computer and network era. 4. Rather than the concept of medium, we may use the concept of software to talk about past media, that is, the kind of user's information operations a particular medium allows for. 5. Post-media aesthetics needs to make a distinction between an ideal reader/user as inscribed by a text/software and the actual strategies employed by readers/users. This distinction needs to be made for all cultural media/software. 6. User's tactics follow particular patterns which Manovich dubs information behavior.

The term software shifts the emphasis from the text/media to the user, yet information behavior is needed to discuss dimensions of cultural communication, as it takes a prominent place in information society. While every act of human cognition and perception can be understood as information processing, this is not what Manovich means. Instead, Manovich claims that at present our daily lives revolve around new behavioral activities which involve dealing with large amounts of information. 'In information society, we evolve particular information behaviors', and when applied to the past, information behavior reveals how all past culture was also about information processing (Manovich 2001b: 9). New techniques of encoding information were developed by artists and users who created corresponding techniques to extract this information. Furthermore, art history is likewise the history of new information interfaces and user's new information behaviors. Manovich suggests that concepts such as cultural software (2008b), cultural communication, information interface, and information behavior can be applied to any historical or contemporary cultural object.

Dominico Quaranta describes the current post-media condition (after Lyotard's *Postmodern Condition*) of contemporary and new media art in 'Postmedia Perspective' (2011). When new media art started venturing into the contemporary art world around the mid 1990s it is welcomed with disdain. What is the cultural value of celebrating the medium and technology, contemporary art critics ask? At the same time, the impact of socio-technological developments on the arts, without distinction of the medium, and research on specific (mostly non-technological) topics in both old and new media are no strangers to the contemporary art world.

Importantly, moreover, the notion of post-media has a complex history. Guattari coined the term in the essay 'Entering the Post Media Era',published in *Soft Subversions* (1996), through which he promoted the use of media as a tool of dissent, a political tool for revising relations between producer and consumer, from mass-media controlled by the powers that be to grassroots political/cultural activism and movements that tactically employ (social) media. Peter Wiebel defines post-media as "the art that comes after the affirmation of the media; and given that the impact of the media is universal and computers can now simulate all other media, all contemporary art is postmedia" (Wiebel 2005 in Quaranta 2011). There is nothing outside and beyond the media experience that has become the norm for the aesthetic experience. All cultural production is post-media, and this includes professional art as well as amateur practices.

Rosalind Krauss deploys the term 'post-medium' in 'A Voyage on the North Sea: Art in the Age of the Post-Medium Condition' (1999), an essay often cited in contemporary art circles. The title alludes to a short film from 1974 by meta-artist Marcel Broodthaers, an artist known for questioning the institutional side of the contemporary art world and the specificity of media involved. In this chapter, Hayles means to reflect on the decline of the Greenberghian concept of medium-specificity. Manovich, on the other hand, brings these two worldviews together and describes postmedia as being twofold: it is a reflection on the crisis of the concepts of artistic medium and medium-specificity, while the impact of the media has altered the destiny of art and aesthetics.

The concept of the medium was first challenged by the development of new artistic languages such as montage, collage, installation, and happening. Moreover, the advent of media that clashed with the traditional definition of artistic medium such as photography, film, television and, respectively, their new modes of distribution further challenged the notion of the medium. The final blow against the notion of the medium was dealt by the digital revolution. The Turing-machine (PC) appropriates all media and imposes its intrinsic operations so that one may copy and paste endlessly, regardless of the now obsolete medium-specificity. The distinction between media, therefore, simply no longer exists and the traditional concept of the medium does not work in relation to post-digital and Post Internet culture.

In establishing the inadequacy of the concept of media, Quaranta closely follows Manovich' argument, however he proposes using Bourriaud's concept of

relational aesthetics for analyzing post-media cultural production. In a similar vein, French philosopher Nicholas Bourriaud identifies the sociocultural impact of new technologies as a possible departure point for analyzing contemporary art by focusing on the relationship between the interactivity of the media and relational art, and offering a reflection on the impact of digital media on artistic means of production. According to Bourriaud, new contexts are created on the go, all work is remixed, and there are no more stable end products. He further develops the concept of relational aesthetics in 'Altermodern Manifesto' (2009) in which he describes the socio-cultural context of art today, where artists create hypertextual art that traverses geography and history, picking the fruits of globalization and communication. Radicant art, as Bourriaud calls it, is free from media-determinism, and hence free of specificity claims. Therefore, there are no more disciplines, no more exclusion, because this is the end of the medium-specificity. Central to this radical attitude is the struggle for the indeterminacy of art's source code, dispersion and dissemination as opposed to hyperformatting it as dictated by the old media tradition, which ultimately reverts to kitsch.

What this also entails is giving up the old contextual definition of art. On a critical level this means breaking down the barriers between contemporary art and film, design, and architecture, in the service of a new vision for the visual. In this view, the new dividing line proposed by Quaranta should be between art on one side and media, kitsch, entertainment, and medium-specificity on the other side. Art should be aware of the cultural, social and political implications of new media and takes on a social role, or perhaps even the moral obligation, to combat the flattening of culture with complexity, sensation and critical thought, all without becoming moralistic. Fresh ideas and true innovation are located at the fringes of overlapping segments, hence here again, the magic happens at the edge, in the margins. Moreover, recent art made by digital natives operates beyond the contemporary/new media art dichotomy by default because both belong to the tradition of post-media. Therefore, it is vital that these fringe territories remain open to all, so that artistic research on science, media and technology can foster innovation.

After the demise of net.art and the rise of web2.0, Geert Lovink together with Anne Munster ask how aesthetics can be defined in a network society, beyond the hollowed out question "Is it art?". In 'Theses on Distributed Aesthetics' they propose distributed aesthetics as a set of ideas that offers new ways of thinking about the

sensual experience of networked events. Much like Bourriaud's relational aesthetics, it's about the inter-human relations art represents or produces. Distributed aesthetics is an attempt at developing a critical concept that can serve to describe mediated experiences, beyond the virtual and the visual, and beyond technological determinism (Lovink 2008: 227).

Susan Murray examines the present state of popular and amateur photography as found on Flickr, the most popular online photo-sharing platform on the web at the time of publishing 'Digital Images, Photo-Sharing and Everyday Aesthetics' (2008). Her main focus is on the social use of digital photography and online photo-sharing. Murray claims that this signals a shift in the engagement with the everyday image, a move towards transience and the development of a communal aesthetics. This type of (postmedia) photography is less about the special and rare moments of domestic life and more about the immediate, fleeting display and collection of the small and mundane, the everyday image. Photography is no longer an embalmer of time as Bazin claimed, it is more alive and immediate, and has become a much more transitory practice and form. This everyday image is something everyone can create and comment on with relative authority and ease, breaking the traditional dichotomy between amateur and professional (Murray 161).

In the present situation, all contemporary art demands media literacy and new media art needs to converse with contemporary art in order to converge. According to Quaranta, '[a]rt criticism needs to cast off its prejudices on the media nature or the social origin of what it is looking at, and learn to look inside and outside of the art world' (Quaranta 2011). As artists, curators, critics, and the audience we need to forget about medium-specificity and look for relational and distributed aesthetics in the networks we inhabit. As for the common users of postmedia in everyday life, the amateurs, the prosumers and/or produsers, the digitally native pro-ams have taken up an active role in cultural production, especially when it comes to photography, post-photography, or postmedia photography and the evolution of its contemporary vernacular.

3.2 Post Internet

Another term Manovich mentions in his outline for postmedia aesthetics, is post-net culture, and the following definitions of Post Internet can be found on the Post Internet Blog which itself was a project of the Creative Capital/Andy Warhol Foundation Art Writers Grant Program, which ran from late 2009 until late 2010. Rather than strict definitions, the blog offers different overlapping and expanding perspectives that open up ways for thinking about and discussing art and cultural production in the current Post Internet and Postmedia condition. These are:

1. New Media art made after the launch of the World Wide Web and, thus, the introduction of mainstream culture to the Internet.
2. Marisa Olson's definition: Art made after one's use of the Internet. 'The yield' of her surfing and computer use, as she describes it.
3. Art responding to a condition that may also be described as 'Post Internet'– when the Internet is less a novelty and more a banality.
4. What Guthrie Lonergan described as 'Internet Aware'–or when the photo/video or other digitized mediation of the art object is more widely dispersed than the object itself. (Post Internet Blog 2010)

What these descriptions of Post Internet agree on is that they all have their starting point after the introduction of the Web in the mid 1990s. The blog deals with art made by artists who use new media and technologies to create their work, but who do not envision or present themselves as new media artists *pur sang*. These are contemporary artists accounting for the effects of the Internet on art, society and culture at large. But as Harm van der Dorpel rightfully mentions in a 2011 tweet: "Doesn't the impact of the Internet on arts reach far beyond art that deals with the Internet?" Post Internet is not so much a category of art but more the current condition of life and therefore also contemporary art and cultural production. The Internet is ubiquitous and pervasive; it is technology enmeshed with our everyday lives including the social and the political, as well as the arts. The contemporary condition is as much postmedia as it is post Internet.

POOL is another platform on the web that aims to expand and improve the discourse between online and offline realities and their cultural, societal and political impact on each other. In 'Within Post-Internet, part 1' (2011), Louis Doulas describes Post Internet as a rather vague term that is first mentioned by artist Marisa Olson in 2008 in an interview with the website 'we make money not art'. Here, Olson

defines Internet art as no longer strictly computer or Internet-based, but rather as art that is influenced by the Internet and digital media. The effects of the Internet on culture are taking shape online as well as offline, and Olson places emphasis on the latter. In 'The Image Object Post Internet' (2010), Artie Vierkant has dubbed Post Internet 'a result of the contemporary moment'. These are proposals for a new definition of art in a changing Internet society, one that exists under technological influence and compression. Post Internet, in the art context, represents the digitization and decentralization of all contemporary art via the Internet and inevitably the end of medium-specificity, loosening/losing its tight grip on modernist art theory from the 1960s (Greenberg 1982) and early new media art discourse (Quaranta 2011). The postmodern, postmedia and Post Internet condition is what makes today's art contemporary.

All art created after the Internet is effected by and mediated through the decentralized networks of the Internet and other media technologies and products. Art on the Web exists through digital documentation, made possible by consumer technologies since the early 1990s. The awareness of this transformation from previous existence into this new digital realm differs greatly among artists and their works, but in general we can now speak of art before the Internet and art during or after the Internet. Technology and Internet have changed the way we create, produce, consume, share, disseminate, criticize and understand art; the future of art is bound to be a product of the cultural, societal and political technologies and assemblages. "Contemporary art and its participants redefine themselves through these digitizations" (Doulas 2011).

A distinction can be made here, as there are two ways of dealing with art on the Internet. The first is digitization for purely documentary purposes, as a means to an end. The second is art that creatively and critically engages platforms and networks, both physical and/or immaterial. Of course there are many divergent practices within this latter category and for clarification purposes Doulas points to the five principles of new media art as laid out by Lev Manovich in *The Language of New Media*, namely, numerical representation, modularity, variability, automation, and transcoding (2001a). But what comes after new media art, when everything is postmedia and Post Internet? Artist Brian Khek redefines it as follows: "new media art behaves as a term for work that involves current technology and associated phenomena" (Doulas 2011). Instead of prolonging the new media-specific definition,

Khek proposes abandoning the new media terminology along with its specificities. Because of their ubiquitousness, new media are already taken up by all contemporary art. Consequently, the term new media is so malleable, that it has been stretched beyond practical usage and it might, therefore, be more useful to look for new definitions. We need new temporary classifications as a strategy for comprehension, following the example set by Manovich. Post Internet encapsulates all of these conditions and serves as a catch all for a large and diverse pool of work.

In Post Internet society most cultural experiences are mediated online, and all art exists as digital documentations, as photo, video or text. Post Internet art is also digitized, and exists as immaterial entities, regardless of intention. But not all art shares the same intentions. The conflict here lays between art that is digitized through conversion, art that is digital from inception, the latter encompassing all media that do not require exhibition outside (private/personal) computer space. Digital art for viewing on new media devices therefore often sees the gallery as unnecessary and ornamental. It should be noted, however, that there is a significant difference between art that chooses to exist outside the browser and art that chooses to stay inside, to remain digital and immaterial. The differences between online and offline art models and exchanges, as well as translations between these two models could lead to a separation of participants. Artists need to bring their philosophies and politics to the table and open up the discussion between the traditional and the ideal and what this potentially could mean for art and cultural production in a Post Internet society.

Manovich poses the question in 'The Practice of Everyday (Media) Life' if the Internet and social media have rendered professional art irrelevant. Can professional art survive the democratization of media production and access? Manovich admits this question is meaningless. Contemporary art has become a part and parcel of mass culture and a legitimate source for investments and commercial success. The explosive growth of social media platforms has led to many innovations, especially in the field of media and cultural production. There are many (open source) projects exploring these new territories that rival large commercial companies and professional artists. However, as Manovich concludes, while some of these early explorers can certainly be typified as pro-ams or prosumers, the majority are young professionals in training (2008a).

4 Case Study

The amount of photographic images we take in everyday has grown tremendously over the past decades. The emergence of the personal computer, the Internet, and developments in digital photography and consumer technologies have culminated in vast collections of images that vary from personal holiday snapshots to professional ad campaigns and digitized art. The unstoppable multiplication of the digital image ecology has lead to the deflation of value and meaning for the photographic image. Interestingly and paradoxically, however, at a time when photography has been declared dead many times over, the act of photography seems more alive than it ever was before. In post Internet society there are numerous ways to search for and browse through rapidly expanding image banks such as Google Image Search, Google Streetview, Google Goggles, DeviantArt, Flickr, Facebook, 4chan, Tumblr and Pinterest; all offer (photographic) images for public viewing, copying, sharing and remixing. With the rise of social media platforms, a significant portion of the cultural production and distribution of photographic images has shifted from professionals to amateurs. Photo-applications for mobile devices have given amateur photography yet another boost and one application in particular seems to have caught the collective imagination of the contemporary post media crowd by storm...

4.1 Instagram

> It's a fast, beautiful and fun way to share your photos with friends and family. Snap a picture, choose a filter to transform its look and feel, then post to Instagram. Share to Facebook, Twitter and Tumbler too – it's as easy as pie. It's photo sharing, reinvented. Oh yeah, did we mention it's free? (Instagram 2012)

Instagram is a free photo sharing application launched in October 2010 for iOS devices such as the iPhone, iPad and iPod Touch. It allows users to take a picture with the camera on their mobile device, apply a preset digital filter and share it online through social networking sites. Instagram has its own social network, instagr.am, but the application also allows for directly sharing images on Facebook, Twitter, Tumblr, Flickr, Posterous and e-mail through its user interface.

The quality of camera phone images has increased significantly over the years and is now relatively high. In combination with the quality of the available filters, this

explains the popularity of photo-filter-applications for mobile devices such as Instagram, Hipstamatic and Camerabag. Instagram automatically crops photos to a square, reminiscent of analogue Polaroid and Instamatic prints, contrasting the usual 4:3 aspect ratio of mobile cameraphones and the old print aspect ratio 2:3 for photographs. In January 2011, hashtags were added to help users share pictures and communicate with each other on the instagr.am network, and in September of the same year version 2.0 is released, introducing new and live filters, instant tilt shift and rotation, high resolution images and optional borders.

In April 2012, Instagram opened up shop for Android users (2.2 and up), no longer restricting the application to the iOS market, and the number of Instagram accounts has since risen to more than 30 million. At the same time, Facebook acquired Instagram for a whopping 1 billion dollars in cash and stock, promising to keep it independently managed. Criticism of Instagram and its takeover by Facebook centered on the fact that Instagram had no revenue to show, lots of buzz but no business model. Instagram's founders, Kevin Systrom and Mike Krieger, have replied that they will keep focusing on the product and establishing Instagram as the leader in the mobile space. For the future this will entail revenue models such as adding premium services, extra filters or pro-accounts, or incorporating a full-scale advertising platform (Inc.com 2012). Facebook has since released Camera for its own platform, which is a photo-application very similar to Instagram. While advertising models for mobile platforms have been slow to develop, it seems both Facebook and Instagram are taking the time to build their user bases to ensure that all communication through photos goes through them, before unleashing the full potential of advertising on their respective platforms.

> Digital photography never looked so analog. The Hipstamatic for iPhone is an application that brings back the look, feel, unpredictable beauty, and fun of plastic toy cameras from the past. (Hipstamatic 2012)

Applying digital filters to photographs is nothing new. Adobe Photoshop has been the proprietary industry standard since the mid 1990s and similar web-applications offer the same basic functionality online for free. On the mobile market Hipstamatic is Instagram's biggest and most obvious competitor, but beneath the surface of the touch screen these apps show some major differences. The first important difference is the pricetag; the basic version of Hipstamatic costs $1.99 while Instagram is

completely free. Second, Hipstamatic shapes its interface and user experience after the old-fashioned plastic toy-cameras and paraphernalia (lenses, film-rolls, flash-devices) that it remediates. The entire app is made to look and feel like a remediation of analogue Instamatic type cameras; choosing the filter settings before taking the picture and applying it live in the viewfinder, the app oozes with 1970s retro-hipness. Contrarily, Instagram has the simplest user interface possible, which is exactly what makes it so accessible, powerful, and therefore, highly amenable to use on Facebook. It allows users to apply the filter after the picture is taken, although version 2.0 also introduces live filters. Thirdly, Hipstamatic is still only available for iPhone and its design appeals mostly to artistically aware hipsters. The Hipstamatic website boasts the opportunity to make analogue prints from Hipstamatic pictures, to enhance iPhone cameras with multiple physical add-ons, and to afford users a glimpse of the possibilities through its community articles, which are mostly focused on uses of the app for producing artistic photography that is on par with professional cultural production. Instead of this high-brow artsy attitude, Instagram is aiming at the largest possible userbase including amateurs, while concentrating the quality of its output around keeping personal memories and the fun experience of sharing photos that is open and available to everyone, that is, everyone in possesion of a smartphone. Both apps allow the sharing of pictures on several social networking sites as a core feature; however, Instagram is the only one app has its own social network. Again, the force (and potential market value) of Instagram lies in the focus on the mobile space, the social experience and keeping the user interface as easy to use as possible.

The biggest and most popular photo-sharing social network to date is Flickr which allows for all sorts of photography and digital images. As a social network it centers on groups, pools and discussions between photographers, whether amateur, professional, or somewhere along the pro-am spectrum in between. A large percentage of the images on Flickr are created with mobile devices, with the iPhone being the most popular ‘camera’ on the platform. However, Flickr’s mobile interface is tedious to use and the acquisation of Flickr by Yahoo! in 2005 has not done the platform much good. The imperative to sign up for Yahoo! accounts has made some frequent users leave the platform.

The slow and difficult integration of mobile applications and services has created a bottleneck for Flickr, which is problematic given that Instagram thrives on the mobility and immediacy that is characteristic of mobile photography. Because

Instagram uses a low-resolution output (612 x 612 pixels) as its default setting, the focus is not so much on photographic quality or size but rather on mobility, immediacy and a fun experience for the everyday amateur user.

Another interesting thing about social photography, mobile photography or iPhoneography is the metadata that is attached to the image file. The JPEG/EXIF file format records date and time-stamps, camera/filter-settings, geo-locations, and tagged friends, while, adding layers of valuable information to the image (Stewic 20). For Facebook this data may be even more important than the image itself and this new form of digital indexicality is further expanded by the folksonomic practice of adding semantic layers of metadata such as descriptions, captions, comments and hashtags. And while Instagram is mostly active in the mobile space, its open API policy also makes the images and their metadata publicly accessible/searchable through a variety of third party web-applications.

Browsing through these endless Instagram streams solidifies the feeling that Instagram is more about the social and less about artistic or qualitative photography. But it is also about finding an audience for your photos and participating as an audience for someone else's work. In that sense, Instagram is comparable to Twitter as an alternative source of news. And because of the accessibility of the platform, it is possible to get a glimpse of the previously private lives of virtually anyone, through the intimacy of their mobile phone pictures. Instagram can be a window to places and things one normally doesn't get to see.

Apart from the fact that the immediacy with which these photos are taken and instantly disseminated online has been, until now, unparalleled, the photograph as a window to the world is something that Walter Benjamin and John Berger had already ascribed to the nature of photography. And with manipulation as an intrinsic part of photography's history, the applied filters may set a certain mood or add a sense of spectacle, yet in this regard, they are essentially nothing new. Like all other photo-filter-applications, the filters remediate the effects of choosing certain analogue camera-settings in combination with the chemical characteristics of the photographic base-materials, or darkroom techniques such as overexposure and bleach bypasses. The same remediations can be found in Adobe Photoshop and Lightroom where the toolbar icons remind us of their analogue origins. However, with applications such as Instagram, the filter-parameters are preset, leaving little space for further control over the desired effect and end result. At the same time, these limitations form a large

part of what makes Instagram so accessible and easy to use. The technical constraints of the camera phone also make for an egalitarian social and artistic experience, so that when everybody has the same constraints to deal with, it is interesting to compare the different outputs, potentially bringing amateurs and professionals closer together.

But are these amateurs taking over the cultural production of photographic images from professionals? In the case of press-photography, it is true that mobile phones with cameras have made everyone into a potential photographer and newscaster. Much as Twitter can be an alternative source of first hand news, it still depends on professional news media for a large part of the shared content. But because both Instagram and Twitter benefit from the immediacy with which events can be shared by anyone, citizen journalism can provide opportunities to report from parts of the world that are often overlooked by the news media. That said, however, professional ethics and expertise of journalism are not part of the application, and while there are some examples of professional press photographers who use Hipstamatic or Instagram for their work, they are still few in numbers.

Press photography has always had a tense relation with image manipulation, and the question remains as to whether the truth value of photography is again being challenged by Instagram. CNN has used Instagram images in their news feed, leading to protests from professional photographers who claim that these images “cheat the viewer” (Stern 2012). Stern, for example, has expressed concerns that, with these apps, artistic images can be produced without any photographic training or professional equipment. Such images are faked and fail to convey the naked truth of news events. I wouls argue, however, that while these concerns are understandable, it is simply not the case that every Instagram image has instant artistic merit and intention, regardless of training or experience in the field. These images are no more faked than any other image that adheres to photorealism. In the end, it boils down to the ethics of the individual photographer and the newsmedia to decide how to present these images and what it is they represent.

A more derogatory term that is sometimes used to describe this new form of photography is fauxtography, which term has two meanings. First, ‘fauxtography’ describes manipulated news photography as mentioned above, that is, false images of a faked reality mostly used to push ideological agendas such as in propaganda and advertising. The term also refers to amateur photography that is produced with cheap

gear and prefab settings, or artistic photography that does not take any skill to produce. So if the question is, can artistic photography be created with Instagram? Sure, why not, one might answer, but the usual outcome is something different. For the majority of its 50 million users Instagram is cultural production on the level of digital folklore, or amateur scrapbook aesthetics for the networked age. The photographic image plays a central role as vernacular currency in this post-media ecology. Much like the communal aesthetics that Murray encountered on Flickr, Instagram creates its own brand of ephemeral and distributed aesthetics of the everyday.

5 Conclusion

In this thesis I have attempted to trace the philosophical lineages of critical media theories of the photographic image as they relate to cultural production, more specifically by focusing on distinctions between amateur and professional cultural production involving digital and distributed photography. As I have argued, history shows that despite the many deaths that photography has supposedly undergone, especially in the last two decades, it is still alive and kicking, and engendering discussion in the theoretical arena.

Moreover, while analogue photography might be as good as dead, this is not to say that photography in general is dead, or that the legacy of analogue photography is lost and forgotten. Contrarily, photography today seems more alive than ever. Whether it is called post-photography, post-media photography, social photography, mobile photography, or even iPhoneography, the smartphone has introduced new forms of distributed, ephemeral or everyday aesthetics to the practice of photography, relying heavily on remediations of old media as well as on new developments in digital imaging. The smartphone can produce and distribute photographic images within seconds, providing new opportunities for personal expression and new forms of citizen journalism. Furthermore, user generated content and folksonomic practices such as tagging pictures create market value as well as community value. Cultural production today is a collaborative, distributed, participatory, and interactive experience, and the photographic image plays a central role as post-media vernacular.

As new photography applications are developed at an increasing rate, critical theories of photography remain relevant. The infinite virtualities that the camera can capture are now directly streamed to display on screen in realtime at an arm's length. Instead of looking through a viewfinder and framing reality, with digital photography the image becomes directly somewhat comparable to reality, hence the image on display has become an interactive interface in itself. At the same time, the act of taking a picture from this fleeting stream of images becomes even more arbitrary since it already existed as an image. Without memory or storage limitations, every moment represents a potential picture and it is virtually impossible to exhaust the camera program. Burst photography allows the user to make a sequence of still images and pick out the right moment later. The ecology of images that Sontag

pleaded for has made way for a post-media ecology, where shadows of shadows are continuously remixed and redistributed. As Flusser argued, intentional deviation from the pre-programmed virtualities contained in the apparatus is what distinguishes man from machine. The tool-makers hold the decision making powers in post-industrial cultural production. This is where Manovich locates the most pressing challenges for post-media cultural production in general. For the (re)programming of the postmedia apparatus, the source code needs to remain open and accessible to all in order to deviate from it and to push innovation further, beyond the walled gardens of Apple, Amazon and Facebook.

Mobile photography such as Instagram is out there for everyone to see, immediately and instantly lost in a stream of millions of other images, holding on to its hashtags for dear life. It's a great way to tell your own personal story in uniform scrapbook aesthetics, and to follow other people through their instagram stream. It is also a great way of getting in touch with the act and art of photography, to enter into and contribute to its vibrant history. Professional photographers have no reason to feel threatened by it. Instead, they should embrace the new and up their own game. They should enjoy the advantage of knowing how to recognize a good story, and frame their own critical narrative. They should pass on their way of seeing through the lens. Good quality never dies, and as amateur photography shows, neither does kitsch.

The human eye is the most direct interface to the brain. Touch and hearing also play an important role, but ultimately vision directs most of the bodily movements and decision making processes of the brain. Seeing is believing and vice versa. The photographic image as a cultural object helps us believe that what we see as real, is actually real, or rather once was real, even if it is in fact not real. Photography suspends our disbelief. More than ever, the photographic image helps control our overmediated life styles while at the same time feeding the matrix that we have grown to both love and loath. We are living in a time that can be described as postmodern, post-industrial, post-historical, post-photographic, post-human, post-media, and perhaps even post-Internet. It makes one wonder what might happen if the post-its run out.

At the heart of photography there is innovation taking place constantly. The next paradigm shift in terms of user experience and immersiveness will probably be brought forth by further developments in lightfield photography. This 5-dimensional

way of capturing light and all its vectors allows users to focus the image interactively and when applied to realtime HD video playback in combination with eye-tracking software and cameras, this opens up new possibilities for interfacing with artificial visual realities and evermore new mediated ecologies. We move yet another step closer to post-human vision and liminal interfacing. It is vital that we remain critical of the structures and programs that define and control these post-media realities, especially the more we are *living* them.

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