

To cut or not to paste,
that is the question...

Gilles Massot

In a Newsweek article published in 2007, the American art critic Peter Plagens asked the question “Is photography dead?”. The question was raised in regards to the development of the fictitious photographic approach adopted by many artists from the 1980s onward and the overwhelming development of digital photography at the turn of the 21st century. His claim is that photography has lost contact with reality, due to the concomitant development of both trends. In short and in his opinion, fictional narratives and virtual pixels have killed photography. Photographs have become gallery material “essentially no different from paintings concocted entirely from an artist’s imagination, except that they lack painting’s manual touch and surface variation”¹. Reading through his article however, I couldn’t help but notice how much his point, while interestingly critical, was hardly anything more than a reversed version of the debate that marked the emergence of photography in 1839. And here we indirectly touch on a fundamentally dualistic aspect of photography that seems to define the medium.

From the very day of its announcement to the world, photography proved to be some sort of strange Janus-like creature who the moment you spoke to one of its heads would say: “I would rather have you talking to the other side of me”. On the 19th of August 1839, the Daguerreotype process was presented to a joint meeting of the academies or arts and sciences. Art and science? Science or art? This new technique was at long last fulfilling the search for a perfect mirror image of the world, and the French politician-scientist Arago could see in its application tremendous potential for the development of both fields of human activities. He was of course perfectly right, but a question remained: was the world ready for something that would be at once scientific AND artistic? Some people were and they devised the term “the art-science of photography”² to describe a medium that looked different from anything else that had existed before. Science quickly adopted this new medium. Art however was much more difficult to convince. To people of the mid-nineteenth century, the main attraction of photography was its perfect mirroring of reality. Its most virulent critics saw it as a proof that it could never become an art form because it would always fall short of making choices in the interpretation of reality the way an artist does. Choices, the word will come back later.

In 1857, the critic Gustave Planche remarks that while making the photographic image “the sun gives the transcription of everything that it touches, forgetting nothing, sacrificing nothing” and therefore concludes that photography cannot be art because it “can not choose what suits it and reject what doesn’t”³. Exactly 150 years later, Peter Plagens feels that “Film photography’s artistic cachet was always that no matter how much darkroom fiddling someone added to a photograph, the picture was, at its core, a record of something real that occurred in front of the camera. A digital photograph, on the other hand, can be a Photoshop fairytale, containing only a tiny trace of a small fragment of reality”⁴. Basically the same type of discourse, albeit pronounced from two opposite points of view, as if photography, whether analogue or digital, could not but trigger perceptions in which she is forever too much this or not enough that, at once too perfect and irremediably incomplete.

The tension between analogue and digital photography highlighted by Plagens was almost immediate the moment particles of silver began to be replaced by pixels. And although digital imaging has become the norm for mass photographic consumption, the debate is far from being resolved. In the conclusion of his book *La Photographie*, André Rouillé suggests that this transformation “isn’t simply technical” but that “it touches the very nature of photography. To the point that it isn’t any longer certain that digital photography is still photography” because “the technological apparatus that makes digital photography results in a transition from the world of chemistry and energy of things and light to the logical world of mathematical images”. But doesn’t a digital photograph entail more than ever a photo-graphic process, that is the writing with light of an actual language made of digits? And isn’t digital photography doing more precisely than ever what Daguerre had predicted: allowing everyone to draw perfectly and instantly without learning how to do it?⁵ The reproducibility of the negative-positive process invented by Talbot was for a long time regarded as the key element that defined photography⁶. It is now in the opinion of some almost obsolete. In many ways it is as if this had been only an episode on the long road leading photography to the fulfilment of its promises. Beyond

the tremendous technical changes, has the photographic concept really changed that much? Are today's digital fantasies without any relation to whatever existed before? Were photographers ever "bearers of truth"⁷ as Plagens assumes?

In fact, the relationship between photography and reality has always been highly debatable. Yes, in essence a photograph can only be the representation of something that physically existed in the past. But whether the resulting image is reality or fiction is an altogether different matter. This was demonstrated as early as 1840 by Hippolyte Bayard's *Self-portrait as a Drowned Man*. The image was conceived and staged by Bayard as a protest against the rejection of his invention⁸ in favour of the Daguerreotype. It deals with the topics of self, death, history, text, protest and most importantly, it is the first image in which reality is intentionally pretending to be something else than it really is⁹. At a time when people around him were getting ecstatic to the point of getting fooled by the realistic rendering of photography, Bayard was initiating the photographic fictional interpretation of reality bemoaned by Plagens. About twenty years later, the photomontages of British High Art photography raised that question even more convincingly. Photographers of this period are famous for a sophisticated technique that announced the cut and paste method used for photomontage in Photoshop, albeit at a time when enlargers were only beginning to be conceived of¹⁰. Henry Peach Robinson's *Fading Away* (1858) is most representative of this school, both from a conceptual and technical point of view. This composition of five negatives depicts a girl dying of tuberculosis, surrounded by her grieving family¹¹. This fictitious image so carefully orchestrated by Robinson was perceived as disturbing for its realistic rendering of a most private and sensitive moment in the life of a family. The image was becoming reality in people's mind. Conversely, what about the many supposedly "straight" photographs meant to have been a documentation of the world "as it is" that turned out to be controversial in the course of history? From the *Valley of the Shadow of Death* by Roger Fenton (1855)¹², to the *Death of a Loyalist Soldier* by Robert Capa (1936)¹³, to the *Kiss on the Town Hall Square* by Robert Doisneau (1950)¹⁴, many iconic images from the history of journalism are now suspected, or have even been proven, to be the subject of manipulation. In short, whether analogue or digital, photography seems to have an in-built aptitude for turning the real into fiction and the fictional into reality. Bayard's self-portrait demonstrates that from its inception some photographic practitioners had intentionally blurred the boundaries between reality and fiction, viewing this process as an almost natural attribute to photography.

From chemistry to electronic, the particle aspect of light has seen a drastic transformation in the way its energy is recorded. On the other hand, much of the initial development of photography resulted from researches in optics based on the wave aspect of light and on that point of view the most sophisticated digital camera is still hardly anything different from the Daguerreotype camera. To some extent, one could go as far as saying that the many wonderful technical advances of the last decade too easily hide the fact that digital photography has yet to produce a decisive conceptual breakthrough that will truly take photography into a new era. The hyper-real/hyper-sharp quality of HD digital images of today was already present in some daguerreotypes. As seen previously the cut and paste manipulations that allow surreal images are somehow an old story. And when the image is totally virtual, the benchmark of its success will be how "real" it manages to look, precisely the way hyper-real paintings of the 19th century were judged...in their comparison to photography!

Some of the fantastic promises of computational photography¹⁵ on the other hand clearly intend to break new grounds. However, a closer examination in relation to photo history shows that conceptually these advances are often following those concerns that had driven the progress of photographic technology since day one. The search for an ever-extended dynamic range finds an early approach with Gustave Le Gray's use of multiple exposures for his shot *Mediterranean Sea at Sète* (1856-59). The method was then used to compensate the limitation of the emulsion's sensibility to the blue part of the spectrum. The control of focus to different planes of the subject through the plenoptic camera¹⁶ uses indeed a totally different approach in that it records the light making the image and not the resulting image. But the working of the end result

strangely echoes the multiple exposures technique used by Edouard Baldus for his *Cloister of St Trophime*, Arles (1851), in which ten different sharply focused negatives were combined in one print to compensate for the limitation of the lens' range. By aiming for a "direct sensing of the motions themselves" rather than relying on the "instantaneous' ideal"¹⁷ of film-style photography, the concern for motion blur and the capture of movement in computational photography at first seems to proceed from a different conceptual point of view. However, one can also trace the origin of this conceptual difference in the respective approaches adopted by Edward Muybridge and Etienne Jules Marey. Interestingly, the article on computational photography ends on an appropriate philosophical note acknowledging that these technical advances concerning the quality and appearance of the images are not addressing a fundamental question. Considering the overwhelming presence and exponential multiplication of light-made images¹⁸ in today's world, how is mankind to decide which of these images truly matter? The question of choice here becomes paramount, a choice that computers cannot make, at least not yet.

In 2004, as part of my photo history class, I attempted to give a name to the phenomenon of endless multiplication of light-made images from which this question arises. From the day of its inception, with the *Point of View from a Window at the Gras* by Niepce in 1826, I suggested that photography engaged with what I term the Constant Self-recording Mode, a process in which the world looks at itself existing and most importantly records itself existing¹⁹. This process, together with the development of many other technological advances resulted in the infocom society in which we live today, photography being arguably the oldest element of this infocom phenomenon²⁰, thus making it possibly the most significant threshold of modernity in the post-industrial era²¹. In 2008, a friend highlighted in a conversation that this idea of "constant self-recording mode" echoed in many ways the vision developed in the later part of his career by the influential physicist John Archibald Wheeler. His conception of the world was contained in the title of an article published in 1988: *World as system self-synthesized by quantum networking*. Wheeler illustrated the idea with a simple yet expressive illustration showing a capital U (for universe), one arm of the letter being equipped with an eye looking at the opposite arm. This illustration of the quantum principle by which things can only be described (and therefore exist for the observer) in their relation to one another fitted very well indeed the process I intended to express with my own concept of the constant self-recording mode. Upon reading Wheeler's article another analogy that he gave to describe the quantum phenomenon struck me as fitting particularly well with photography.

Quantum Theory was largely derived from the observation of the strange behaviour of light when it was established that it existed either as a wave or as a particle depending on the way the experiment was conducted, a particle that was eventually named "photon". And here is how Wheeler described the photon: *The photon is a great smoky dragon, its teeth sharp where it bites the one counter or the other, its tail sharp at its birthplace, but in between totally smoky.*²² Under his pen, the surprisingly poetic description of the light particle focused on two concepts that happen to form the basis of the visual language of photography: Sharp and Blur. And behind it, lay the seemingly never-ending dual nature of photography, the art versus science tension, the two inventions as direct positive and negative/positive, the very negative/positive process, the mystery of light and shadow that makes every single image, and so it goes on. The intrinsic dual nature of photography would therefore seem to take its form from the very nature of the thing that makes it happen... the world as a system self-synthesized by quantum networking.

The development of quantum mechanics was also a consequence of the revolutionary approach to physics developed by a man whose image has interestingly enough become an icon of the 20th century. In 1905, Einstein's equation finally came to formalise... what photography had been more or less showing for a little less than a hundred years already! According to Relativity, space and time cannot be considered independently from one another. In fact they are "two sides of the same coin and should properly be thought of as a single entity: space-time"²³. And what else happens in a photograph other than the collapsing of the dimension of space onto the dimension of time? In a photograph it is as if the dimension of depth is

transferred-to/shared-by the dimension of time. The "space" of a photograph exists in the "depth" of its time. The photographic shock that took place in the 19th century was that finally humankind could literally see back in time. Given that in today's physics, mass is defined in relation to the speed of light, it might be therefore worth looking back at what truly happened that day when the perpetual movement of light was stopped and visually captured to result in a frozen moment. And maybe we can use elements of the Quantum Electro Dynamic to conceive of the photographic capture of reality as something else than just "an image".

The Strange Theory of Light and Matter better known as QED is a little book by Richard P. Feynman that can help anyone interested in what lies beneath the surface of the photographic image to replace a widely accepted misconception by a beautiful puzzling mystery. When lighting a shot in a studio, one generally works on the idea that light travels in a straight line and bounces off the subject. One also often says that the surface "reflects" the light, as if it was the same light that left the source to reach the photo-sensitive surface (or the retina for that matter). But not quite so according to QED. In fact in Feynman's own words, "the idea that light goes in a straight line is a convenient approximation to describe what happens in the world that is familiar to us"²⁴. And what truly goes on at the micro level of reality that is no longer familiar to us is much more interesting. Quantum Electro Dynamic proposes that the photons are absorbed by the electrons, making them jump one energy level in their relation to the atom's nucleus. The electrons then instantly return to their original state, emitting new photons in the process. So light doesn't just bounce off the surface of the object. It is literally absorbed and a 'new' light released, charged with the information resulting in the visual appearance of the object. In other words, the camera doesn't capture just an image of the object, it literally captures something OF it²⁵! So at the heart of the physical world lies a permanent on-going exchange of information in the form of energy/matter, a movement fixed for the first time in 1826, making the information concerning that time and place physically available to future generations. And here another form of duality takes shape, one that opposes movement and stillness, one that works again at the heart of the photographic process. "In today's world, no elementary quantum phenomenon is a phenomenon until it is a registered phenomenon - that is, indelibly recorded²⁶ or brought to a close, in Bohr's phrase, by an irreversible act of amplification, such as the avalanche of electrons in a Geiger counter or the blackening of a grain of photographic emulsion, or the click of a photodetector."²⁷ In other words, photography was a forerunning physical sign of the emergence of a quantum perception of the world in the fabric of the time-space continuum. In fact the parallels between photography and quantum mechanics are so uncanny that I am beginning to suspect that photography could be to the macro world what measurement is to the quantum dimension, the observation that defines the nature of the thing observed, the collapse of the wave function that shows the world for what it really is: an illusory image.

So in light (!) of all this, what could be a true conceptual and philosophical shift of the esthetic of photography in the computational age? The answer to that question obviously isn't a simple one and requires first a clear understanding of which aspect of photography we are talking about: the medium or the phenomenon. As a medium one has to take into account photography's limitations. Although photography resulted in a new way of "seeing" that greatly influenced the visual arts²⁸, it nonetheless always remained dependent on those fundamental notions such as composition, contrast and tonal values that have ruled painting and graphic mediums for centuries if not millennia. Computational possibilities are many and range from the idea of extending the photographic capture to the unseen part of the electromagnetic spectrum to the futuristic concept of a 'camera cloth' that would light up and record at the same time all details of an object while wiping the cloth over its surface²⁹. But will the resulting images³⁰ ever break away from the rules that have been governing visual creativity since the dawn of time? Without being overtly pessimistic one can very much doubt so.

On the other hand, "the right word, Bohr emphasized, is phenomenon"³¹. One should not forget that long before being a medium, even long before the idea of image-making started shaping-up in the depth of "the cave", the elements that make photography already existed as natural phenomena in the form of

physiological vision and natural chemical reaction to light. And this is where I found myself eventually in full agreement with Plagen when he says at the end of his article that "the next great photographers - if there are to be any - will have to find a way to reclaim photography's special link to reality. And they will have to do it in a brand-new way."³² A return of photography to reality is needed, yes, but not from the perspective of image making. Rather this return to reality will be of relevance only if it focuses on understanding the true nature of a phenomenon that revolutionized the world the moment it crystallized. A phenomenon the working of which still remains in many ways a complete mystery.³³

The universe of technical images, emerging all around us, represents the fulfilment of the ages, in which action and agony go endlessly round in circles. Only from this perspective, it seems, does the problem of photography assume the importance it deserves.

Vilém Flusser - *Towards a Philosophy of Photography*

The question whether the birth of photography was a discovery or an invention is often raised as an introduction to history of photography. Fact is that many things in the birthing process of the medium give the impression that photography simply wanted to exist, as if it was an unavoidable step in the evolution of not just humankind but the world³⁴. Most significantly, the photographic camera turned out to be an apparatus that signaled the shift of humankind into a new era, one in which life and power came to be defined by the transfer and possession of information. The pounding question that we, humans, are faced with today is what to do with this avalanche of images-information resulting from the constant self-recording mode. "It is a question of freedom in a new context"³⁵ says Flusser who believes that photography's task might well be that of a self-reflective apparatus questioning "the human intention that willed and created"³⁶ the world of apparatuses we live in today.

As I have tried to expand throughout this article, the parallels, if not similarities, between photography and the nature of matter, as we can understand it today through quantum physics, are just too many to be ignored. At the heart of any form of artistic practice is the question of choice, and so it is at the heart of quantum mechanics experiments³⁷. And the implications of these choices when applied to the computational nature of photography go way beyond the age-old question of moral choice, for they might very well turn possibilities into reality, just as they do in quantum physics experiments. When a photographer will be able to completely relight a scene through 4D acquisition, with options that will be all fully realistic but only potentially so³⁸, what will be the nature of the resulting image? One would think that to the CPU processing the information the visually created moment will be logically as "real" as the original capture from which it resulted. Already let's not forget that when we speak today of a "virus", probabilities are high for it to be about a completely abstract entity that nonetheless creates very real events.

"The heart of mind is programming and the heart of programming is communication. In no respect does the observer-participancy view of the world separate itself more sharply from universe-as-machine than in its emphasis on information transfer."³⁹ The photographic process IS a form of cut and paste method that allowed the transfer of information across time and space. The question as to which information is selected and transferred to "the other", whatever the nature of that other might be, then becomes paramount in defining the reality this transfer will construct, from an artistic, moral and it would seem by now physical point of view. The construction of a world in which "to cut or not to paste" has indeed become the question.

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- ¹ Peter Plagens, *Is Photography Dead?*, Newsweek, issue dated 10 December 2007
- ² Mary Warner Marien, *Photography, a Cultural History*, p. 163, Laurence King Publishing, Upper Saddle Rive, 2006
- ³ André Rouillé, *La Photographie*, p.67, Gallimard, Paris, 2007
- ⁴ Peter Plagens, *Is Photography Dead?*, Newsweek, issue dated 10 December 2007
- ⁵ Idea developed by Daguerre in his *Historique and Description des Procédés du Daguerreotype et du Diorama*, 1839, cited in François Brunet *La Naissance de l'Idée de Photographie*, p.90, Presse Universitaire de France, 2000, Paris.
- ⁶ An argument used by some historians in favour of a British invention of "real" photography by Talbot as opposed to a French one by Niepce and Daguerre.
- ⁷ Peter Plagens, *Is Photography Dead?*, Newsweek, issue dated 10 December 2007
- ⁸ In early 1839, as rumours concerning the daguerreotype spread around Paris, Bayard developed his own version of photography. It combined the positive image of the daguerreotype to the paper support of the calotype. But Daguerre had already managed to grab the government's attention and Bayard's invention was ignored.
- ⁹ "The first fictional photograph", Michel Frizot, *A New History of Photography*, p31, Könemann, Köln, 1998. To the exception of gender, this groundbreaking self-portrait was touching on most of the subjects that will make photographic art in the late 20th century. If one adds to this that he staged the first photographic exhibition on the 14 July 1839, one can see that Bayard's role in history of art and not just photography clearly needs to be re-assessed.
- ¹⁰ The first demonstration of an apparatus for enlarging by electric light was done in 1861 by Louis Jules Duboscq to the Paris Photographic Society – *A History of Photography* by Robert Leggat, www.rleggat.com/photohistory/history/enlargers.htm
- ¹¹ Mary Warner Marien, *Photography, a Cultural History*, p 91, Laurence King Publishing, Upper Saddle Rive, 2006
- ¹² Two versions exist of the image taken during Fenton's documentation of the Crimean War, one with road cleared of canon balls and the other on with road full of these, as if Fenton had added them to make the composition more convincing.
- ¹³ The authenticity of the shot that launched Capa's international career when published in Life magazine has been questioned intermittently over the last 30 years. Questions range from why is there no blood on the shirt of the soldier to the veracity of the said location of the shot when compared to elements of the landscape of the actual place in Spain. Capa's never really addressed the critics and the controversy still isn't resolved as far as I know.
- ¹⁴ The seemingly spontaneous iconic shot that spelled the romance of Paris when it was published by Life Magazine, turned out to be a set-up in the 1990s when Françoise Bornet, the lady seen in the picture, revealed that it had been posed on Doisneau's request, a reason for her asking for substantial financial compensation.
- ¹⁵ *Computational Photography* – Raskar, Tumblin, Mohan, Agrawal, Li – MERL and Northwestern University - 2006
- ¹⁶ the Lytro camera was the first plenoptic camera to be commercially launched in Oct 2011.
- ¹⁷ *ibid* – paragraph 7.3
- ¹⁸ Photography and its derivatives in the form of video and cinema.
- ¹⁹ *Photography, a Historical Perspective* – Gilles Massot – Catalogue of the exhibition Transport Asian – Singapore Art Museum - 2009
- ²⁰ Electrical engineering only began to truly change everyday life by the late 19th century (first large scale electrical supply network by Edison in 1882). By then looking at a younger image of oneself and knowing distant parts of the world in the form of photographs had been commonplace for more than 40 years already.
- ²¹ Vilém Flusser develops this idea in another form in the first chapter of his book *Towards a Philosophy of Photography* in which he regards "the invention of the photograph [to be] a historical event as equally decisive as the invention of writing".
Vilém Flusser, *Towards a Philosophy of Photography*, p17, Reaktion Books Ltd, London, 2000
- ²² John Archibald Wheeler, *World as system self-synthesized by quantum networking*, pg10, IBM Journal of Research and Development, Vol 32 N.1, 1988
- ²³ Ross Rhodes, *A Cybernetic Interpretation of Quantum Mechanics*, p12, <http://www.bottomlayer.com/bottom/argument/Argument4.html>
- ²⁴ Richard P. Feynman, *QED – the strange theory of light and matter*, p56, Princeton University Press, Princeton, 2006
- ²⁵ See Sontag's parallel between Nadar's mention of Balzac's dread of being photographed and primitive people's fear of photography as a "sublimated looting of the personality" in *On photography*, pg 158/160, London, Penguin Book, 1979
- ²⁶ To be related to the notion "constant self-recording mode" expended above
- ²⁷ John Archibald Wheeler, *World as system self-synthesized by quantum networking*, pg10, IBM Journal of Research and Development, Vol 32 N.1, 1988
- ²⁸ On that subject the works of Moholy Nagy and Rodchenko could come at the forefront of a long list.
- ²⁹ *Computational Photography* – Raskar, Tumblin, Mohan, Agrawal, Li – paragraph 7.5 - MERL and Northwestern University – 2006
- ³⁰ The discussion of the very notion of image far outgrows the frame of this article.
- ³¹ J.A. Wheeler, *World as system self-synthesized by quantum networking*, pg10, IBM J.RES DEVELOP Vol 32 No.1 January 1988
- ³² Peter Plagens, *Is Photography Dead?*, Newsweek, issue dated 10 December 2007
- ³³ See Barthes' fundamental question concerning the "photograph in the winter garden" that makes the high point of *Camera Lucida*.
- ³⁴ The phenomenon on which the medium is based is entirely natural, a way of functioning of the world and not just humankind. Music is another artistic medium sharing that property.
- ³⁵ Vilém Flusser, *Towards a Philosophy of Photography*, p79, Reaktion Books Ltd, London, 2000
- ³⁶ *ibid*, pg 73
- ³⁷ Prior to any experiment, the researcher will be faced a 3 possibilities, each predicting a result, and the choice of the researcher will define the final event recorded.
- ³⁸ *Computational Photography* – Raskar, Tumblin, Mohan, Agrawal, Li – paragraph 6.2 - MERL and Northwestern University - 2006
- ³⁹ John Archibald Wheeler, *World as system self-synthesized by quantum networking*, pg15, IBM Journal of Research and Development, Vol 32 N.1, 1988

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