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Large format photography in the digital era
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Abstract:

Large format photography refers to the photographic practice that utilizes a large light sensitive surface to capture photographs. As of 2018, large format photography is still a subset of analog photography. The digital revolution brings us into the digital era. Manufacturers and businesses in the photography industry is forced to adapt the transition from analog to digital in order to survive and succeed in the new market. Meanwhile, photography theorists find themselves facing a new set of issues because the photographs have become immediate and immaterial. While camera manufacturers have in effect accelerated the analog-to-digital transition with their proactive business strategies and relentless marketing campaigns, higher education has become the last bastion for the analog where large format camera classes teach students the tradition of photography and how to see the world contemplatively.

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Introduction

At the inception of this thesis, the grand narrative I vaguely had in mind was quite different from what I actually write in the following. Breaking down the topic of *Large Format Photography in the Digital Era*, I had assumed everybody would understand the "digital era" part, because of our daily interaction with and within it. So the thesis was to take this commonsense as a given. This way, the emphasis of my thesis would automatically fall on "photography." I planed to recount the history of it, demarcate analog photography from the digital one on the timeline (which, chronologically, automatically makes the analog an outdated technology), and in turn find justifications for the stubbornness of large format analog photographers. The initial grand narrative was intuitive. The task was feasible. The content was fitting, because it was about the history of photography and its contemporary practices which I, a master student in Photography, would write about as my graduation thesis.

Nevertheless, as more materials were taken into consideration and I had to look for more logic ways to link them together, I realized that the initial narrative had missed the bigger picture—the historical context of photography. If we ignore the historical context and only focus on the development timeline of photography, we surely can determine, for example, the date of the advent of digital photography, but soon would we discover that, around the same time period, there curiously coincided many comparable analog-to-digital transitions in all kinds of field! These coincidences are a good indication that it is the historical context that determines the photography, not the other way around.

Photography is but one activity that was and is continuously affected by the digital revolution. Hypothetically speaking, if photography has not at all got caught in the wave of the digital revolution like everything else has, it would have made perfect sense for film photographers to continue their status quo practice—shooting film. It would not have needed any extra justification other than considering the continuation as a behavioral momentum. But the hypothesis did not happen. In reality, instead of asking "Why analog photography in the digital era?", I think the more pertinent question would be "How photography was forced into the transition from analog to digital?"

In Chapter I "Large format photography," I try to define what large format photography is and recount a brief history of it. Because large format photography is a subset of analog photography and in many senses the extreme kind of analog photography, it takes on all heatedly debated issues on analog photography, among which I want to discuss two topics: 1) whether the practice of analog photography in the digital era is due to people's nostalgia; 2) whether such practice is a kind of fetishism.

In Chapter II "The digital era," I talk about the digital revolution and historically contextualize the digital era according to the macroeconomic theory "Kondratiev waves." Once my proposition that the digital era has come like an unstoppable wave washes ashore is established, we will look at how several industry-leading companies had adapted their business strategies to the digital revolution. Some did good, others not so much. Because the digital revolution has fundamentally changed the tools with which we make photographs and how photographs are circulated, photography theories have to adapt as well. We will look at a few new theoretical issues when photography transits from analog to digital.

Large format photography has been a curriculum staple in the photography education on college or postgraduate level. In the third and last chapter "Large format photography in higher education," I first survey the available online information of twelve top photography programs in the United States to understand what is going on with large format photography in higher education. Then I give analysis on why large format photography is still being taught.

Chapter I: Large format photography

Defining large format photography

To give definition to large format photography is as difficult as it can be or as simple as you want. By difficult, I mean that most people who had to face the task have given their definitions negatively—instead of stating what large format is, they talk about what large format is not. It is not 35mm… it is not medium format… and every other possibility having been exhausted, we call it "large format." There is actually nothing wrong with this way of definition, because the word "large" is itself a relative adjective that implies a necessary comparison. "Large" does not exist unless there is "small" around. Another way of defining large format photography is to define what large format camera is. Then whatever photographic act involving the large format camera is naturally large format photography. The four defining characteristics of large format camera are: 1) large image size (4x5 inches and up, see Illustration 1); 2) flexible bellows connecting the front and back; 3) ground glass viewing; 4) interchangeable lenses.[1]
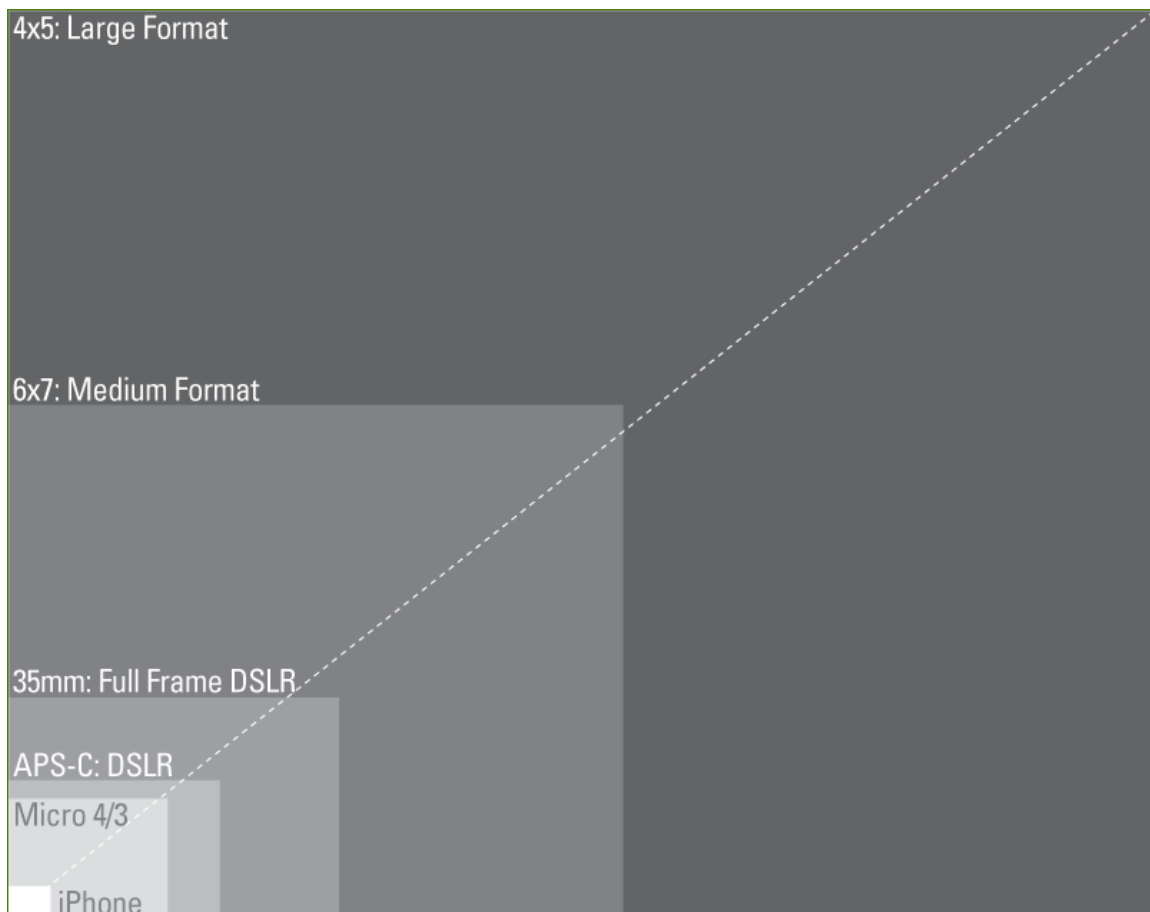

Illustration 1: Film and digital sensor size comparison

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[1] Luong, QT. "Large format primer: basics," Large format photography. http://www.largeformatphotography.info/why.html, accessed on 15 July 2018.

History of large format photography

The view camera is the oldest style of all cameras. Although it has been improved since its inception, its basic design has remained unchanged for over a hundred years. The concept behind the camera can be traced back to the natural optical phenomenon of the camera obscura (Latin, meaning "dark chamber")—a dark room with a tiny hole in the roof, wall or window-shutter through which the view outside was projected onto the opposite wall or a white screen opposite the hole (see Illustration 2).[2] Later, the term "camera obscura" refers to constructions or devices that make use of the principle within a wooden box. Camera obscura with a lens in the opening have been used since the second half of the 16th century and became popular as an aid for drawing and painting.

Illustration 2: Abelardo Morell, *Camera Obscura: Houses across the street in our living room*, 1991.

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[2] Gernsheim, Helmut and Gernsheim, Alison. (1969) *The History of Photography: From the camera obscura to the beginning of the modern era*. London: Thames and Hudson, p17.

The invention of light-sensitive materials in the early nineteenth century created a great deal of excitement. The image of camera obscura finally could be fixed. It also inspired a variety of efforts to make the camera lighter, smaller, and easier to use. And the improvements in lens design follow. The first studio view camera was constructed of two boxes that fit one inside the other so they could be pushed together and pulled apart for focusing. A lens that was primitive by today's standards was inserted at the end of one box, and a glass plate with a light-sensitive silver emulsion was fitted into the other box. The first exposures sometimes took hours, which restricted suitable subjects to architecture, landscapes, and studio still lives. As film speeds slowly improved, exposure times shortened to only a few minutes. Portraits were certainly taxing for the subjects, since they had to sit absolutely motionless for several minutes.

The first view cameras came in a variety of sizes. Early models included the 8x10 inches, the 4x5 inches, the 11x14 inches, the 16x20 inches, the 6.5x8.5 inches (referred to as a "plate size"), the 4.5x5.5 inches (a half-plate camera), the 3.25x4.25 inches (a quarter-plate camera foreshadowing the size of many of the press cameras), the 5x7 inches, and the 2.25x3.25 inches. There were even 8X20 inches and 12x20 inches sizes called banquet cameras, which were designed to take pictures of large groups of people.

During the 1850s the boxes were gradually replaced by leather bellows that were more flexible and lighter. The first camera with bellows resembled the present-day field camera. The first monorail camera was invented in the early 1850s.[3] As the available films became more sensitive, the camera was able to be used outside the studio to record historic events, architecture, landscapes, and people throughout the world. In Europe, view cameras were used by the inventor and pioneers of photography, such as David Octavius Hill (1802-1870) in Scotland, Roger Fenton (1819-1869) and William Henry Fox Talbot (1800-1877) in England (see Illustration 3). In the United States, Mathew Brady (1822-1896) and his assistants photographed the Civil War, and William Henry Jackson (1843-1942), Timothy O'Sullivan (1840-1882), Carleton Watkins (1829-1916), and Edward Curtis (1868-1952) documented much of the American West using large bulky view cameras with glass-plate negatives that were prepared in tents and wagons just moments before they were exposed.

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[3] A monorail camera is a view camera with the lens mount and the interchangeable viewing/film back both fitted on a rigid rail along which they can slide until locked into position.

Illustration 3: Roger Fenton, *Photographic Van*, 1855

Around the turn of the century, photographers such as Frederick Evans (1853-1943), Eugène Atget (1857-1927), and Peter Henry Emerson (1856-1936) worked in Europe, while Paul Strand (1890-1976), Alfred Stieglitz (1864-1946), and Edward Steichen (1879-1973) created wonderful photographs in the United States.

The most significant improvements in the view camera photography have been in the films and lenses. Gone are the days when uncoated lenses were not even corrected for astigmatism. The multilayered coatings now being applied to lenses have improved their sharpness, contrast, and color transmission tremendously. Light is now transmitted more directly to the film plane, rather than being bounced around

between the elements. A photograph made by an older, uncoated lens looks soft and a little flat by today's standards because internal flare in the old lens lightly fogged the entire image. Also, the elements of the lens were not corrected for astigmatism and weren't able to bring the light rays into really sharp focus at the film plane.

Also gone are the days when a photographer had to coat a glass plate negative with light-sensitive emulsion just moments before the exposure was made. Films have improved in terms of their speed, sharpness, and color and tonal rendition. Today's black and white films respond evenly to all colors of the spectrum, whereas older films were orthochromatic, or very sensitive to blue light (that is why white skies were so prevalent in nineteenth-century photographs) and less sensitive to red light. Film speeds for black and white films now reach ISOs between 320 and 400 as opposed to the film speeds of less than 10 that were the only ones available at the turn of the century. The new, thinner layers of light-sensitive emulsion are capable of producing sharper, fine-grained images. Color films, which were generally unavailable until the mid 1940s, are being improved all the time. Their speeds have increased, and their sharpness and grain structure have been steadily refined as well.

The relation between large format and analog photography

If you have an analog watch, it tells the time with hands that sweep around a dial. How much the hands move is directly related to how much time has passed. The movements of the hands over the dial are a way of measuring time. It is not the same thing as time itself: it is a representation or an analogy of time. Until computers started to dominate science and technology in the early decades of the 20th century, almost every measuring instrument was analog. If you measure the length of your finger with a ruler, the section of the ruler that has the same length as your finger isn't your finger, but an analogy of your finger.

Analog technology is not only about measurement. When we say something is analog, we often mean that it is not digital: the job it does, the information it processes or stores, doesn't involve processing numbers electronically. When digital photography came into being, film photography is referred to as analog photography. You capture light information in front of the camera on a piece of celluloid film coated with light-sensitive chemicals. After the film is chemically processed, it contains an image representing the scene you photographed.[4]

Large format photography refers to the photographic practice that utilizes a large light sensitive surface to capture images. Because the surface size by our definition has to be 4x5 inches or larger, as of 2018, almost all the large format cameras still depend on film to capture the image.[5] Therefore in this thesis I treat large format photography as a subset of analog photography.

Because large format photography is a subset of analog photography and in many senses the extreme sort of analog photography, it automatically takes on those heatedly debated issues on analog photography. Limited by the scope of this thesis, I want to discuss but two topics among them: firstly, whether people's analog photography practice in digital era is due to their nostalgia; secondly, whether such practice is a kind of fetishism.

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[4] Woodford, Chris. (2018) "Analog and digital", Explain that stuff. https://www.explainthatstuff.com/analog-and-digital.html, accessed on 15 July 2018.

[5] "The world's first 8x10 large format digital camera is yours for $106,000," The Phoblographer. https://www.thephoblographer.com/2018/04/19/the-worlds-first-single-shot-8x10-digital-camera-is-yours-for-106000/, accessed on 15 July 2018.

Analog photography and nostalgia

According to the Collins English Dictionary, nostalgia is "a wistful desire to return in thought or in fact to a former time in one's life, to one's home or homeland or to one's family and friends; a sentimental yearning for the happiness of a former place or time." The term etymologically derives from the Greek *nostos*, meaning "to return home," and *algia*, meaning "a painful condition." It was coined by the Swiss physician Johannes Hofner in the 17th century as a diagnostic label for what was then considered a disease with symptoms ranging from melancholia and weeping to anorexia and suicide. The apparent disease was related to prolonged and usually involuntary absences from home. By the time debate over the alleged condition and diagnostic uses of the term disappeared from medical discourse in the late 19th century, its metaphorical application, associated with a sort of homesickness for a lost past, had become its dominant meaning in ordinary parlance.[6] Svetlana Boym further differentiates nostalgia into two types—restorative nostalgia and reflective nostalgia:[7]

> Restorative nostalgia puts emphasis on *nostos* and proposes to rebuild the lost home and patch up the memory gaps. Reflective nostalgia dwells in *algia*, in longing and loss, the imperfect process of remembrance. The first category of nostalgics do not think themselves as nostalgic; they believe that their project is about truth. This kind of nostalgia characterizes national and nationalist revivals all over the world, which engage in the anti-modern myth-making of history by means of a return to national symbols and myths and, occasionally, through swapping conspiracy theories. Restorative nostalgia manifests itself in total reconstructions of monuments of the past, while reflective nostalgia lingers on ruins, the patina of time and history, in the dreams of another place and another time.

> Restoration signifies a return to the original stasis, to the prelapsarian moment. The past for the restorative nostalgic is a value for the present; the past is not a duration but a perfect snapshot. Moreover, the past is not supposed to reveal any signs of decay; it has to be freshly painted in its "original image" and remain eternally young. Reflective nostalgia is more concerned with historical and individual time, with the irrevocability of the past and human finitude. Reflection suggests new flexibility, not the reestablishment of stasis. The focus here is not on recovery of what is perceived to be an absolute truth but on the meditation on history and passage of time. To paraphrase Nabokov, these kind of nostalgics are often "amateurs of Time, epicures of duration," who resist the pressure of external efficiency and take sensual delight in the texture of time not measurable by clocks and calendars.

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[6] M. Pickering and E. Keightley. (2006) "The Modalities of Nostalgia" in *Current Sociology*, Vol 54(6), SAGE: London, Thousand Oaks, CA and New Delhi. p921-922.

[7] Boym, Svetlana. (2001) *The Future of Nostalgia*, New York City: Basic Books, p41-55.

Is the insistence of film photographers because of their restorative or reflective nostalgia? As Gil Bartholeyns observes, "[W]hen objects or trends come back into favor, it is not always down to those who grew up with them and for whom they act as generational identity markers. The last analogue generation may drive the market and cultivate the myth, but it is evident that most users are, in fact, digital natives."[8]

From its inception photography has been used to preserve what is in the process of disappearing. "The photographer" Susan Sontag wrote, "is not simply the person who records the past but the one who invents it."[9] Every photo transforms its current subject into a touching antiquity. Sontag's remarks about classic photography in the chapter "Melancholy Objects" are very much pertinent: "in addition to romanticism about the past, photography offers instant romanticism about the present."[10] This observation applies not only to the practice of film photography but also to the digital photography. In Bartholeyns's term, this "self-induced nostalgia" is how we bring aesthetic value to our lives. Bartholeyns was influenced by Fred Davis, who had proposed the "aesthetic modalities" of nostalgia[11]. Davis suggests that there is an art to evoke nostalgia in music, dance and painting, to find aesthetic equivalents of this form of consciousness. Depending on the period, each artist decides on the forms and themes most likely to trigger an experience of nostalgia.[12]

Then, why do we romanticize the present? For Bartholeyns, our daily routine consists mainly of isolated activities —working, shopping, looking after children, watching television—which leave few "memory traces" because they are isolated, de-contextualized, not connected to one another in any significant way. This is the opposite of times full of "lived experiences." The backward-looking aesthetic appears to be a way of cordoning off the time we find so hard to inhabit, of playing with how it is ordered and perceived and of mounting a defense against the feeling that time passes quickly, leaving no trace. The outcome, the feeling of nostalgia, connects the present to the past. Above all, it puts the present at the forefront of existential depth. There is a paradox in wanting to isolate the present day by making it pass more quickly, but such is the law: everything that is transformed into the past and rendered tangible as such will be saved from the void.[13]

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[8] Bartholeyns, Gil. (2014) "The Instant Past: Nostalgia and Digital Retro Photography" in Niemeyer, Katharina (ed.) *Media and Nostalgia: Yearning for the past, present and future*, London: Palgrave Macmillan, p52-54.

[9] Sontag, Susan. (1979) *On Photography*. London: Penguin Books, p67.

[10] Bartholeyns, Gil. (2014), p64.

[11] Davis, Fred. (1979) *Yearning for Yesterday: A Sociology of Nostalgia*. New York: The Free Press.

[12] Bartholeyns, Gil. (2014), p55.

[13] Bartholeyns, Gil. (2014), p67.

As I discuss in the following chapter, companies compete in digital age by way of manufacturing and then selling products in the most efficient way possible. The two most popular buzzwords in the consumerist market economy are "new" and "free". Yet what is being marketed as new is merely the outcome of the latest cyclical production, and free is usually only for the small samples with which businesses lure you to purchase the real and expensive product. If the latest product does not have any updated feature to differentiate itself from the previous generations, the consumers will hardly desire it. And if the latest product does not sell, its manufacturer cannot survive. Not like digital cameras, film cameras are the kind of product does not necessarily sport new feature but wins in longevity. Given the same film stock is used, be it you expose it with an analog camera from the 70s or the 2000s, the results will not be dramatically different. In this sense, film photography is detrimental to the operations of companies such as Canon, Nikon and Sony that constantly profit from and advocate consumerism. Perhaps it is more for this anti-consumerist aspect of film photography that many photographers swear by the medium, not so much for nostalgia.

Analog photography and fetishism

If film photography is not so much about being nostalgic, what about the criticism often downplaying it as a form of fetishism? I want to stress the fact that I have not been able to find any published text that associating analog photography, or even large format analog photography, with fetishism. But it is really not rare to hear the word "fetishism" to be used when somebody giving critique to a photograph realized in the analog format in our digital age. In order to explore and investigate on this rather nebulous critique, I find it necessary to exhaust all major possibilities of what the critique might have meant. Therefore a brief recount of the historical development of the fetishism theory is necessary, for which I drew heavily from Alfonso Maurizio Iacono's recently English-translated book *The History and Theory of Fetishism*.[14]

The word "fetish" derives from the Portuguese "feitiço" and, since it refers to cult objects of the so-called savage peoples, it may already be found in sixteenth-century accounts of the Portuguese voyages to West Africa (see Illustration 4). This word, in turn, comes from the Latin "facticius," meaning artificial. As a noun, the word has also assumed the meaning of witchcraft and sorcery. The notion of "fetishism" emerged as a key concept for a theory of primitive religion only in 1760, when Charles de Brosses anonymously published his *Du Culte des Dieux fétiches* (French, meaning "on the worship of fetish gods"), where de Brosses gives the name "fetishism" to the cult of so-called savage or primitive peoples who worshipped stars or certain terrestrial and material objects.

> [T]he dogmatic opinions and practical rites of the first peoples…concern either the worship of the stars, known by the name Sabianism, or the worship, perhaps no less ancient, of certain terrestrial and material objects called *Fetishes* by the African Negroes, among whom this worship survives—for that reason I will call it *Fetishism*. I ask that I be permitted to use this expression habitually: though in its proper signification it refers in particular to the beliefs of African Negroes, I signal in advance that I plan to use it equally in speaking of any other nation whatsoever, where the objects of worship are animals, or inanimate beings that are divinized. I will sometimes use it even in talking about certain peoples for whom objects of this sort are not so much Gods, properly speaking, as they are things endowed with a divine virtue: oracles, amulets, and protective talismans.[15]

As long as we are not dealing with some particular photographer who actually worship his/her photograph captured on film as a god, we can easily say that film photography is not a fetishism in the sense of religious studies or anthropology. But

[14] Iacono, Maurizio Alfonso. (2016) *The history and theory of fetishism*. Tchernichova, Viktoria and Boria, Monica. (trans.) Hampshire: Palgrave Macmillan.

[15] Morris, Rosalind and Leonard, Daniel. (2017) *The Returns of Fetishims: Charles de Brosses and the Afterlives of an idea*. Chicago and London: University of Chicago Press, p45.

this original concept plays a theoretically decisive role in the much more famed theories of fetishism by Karl Marx, or by Sigmund Freud.

Illustration 4: Congolese fetish. The British Museum

In Marx's *Capital* published in 1867, there is one section entitled "The Fetishism of the Commodity and Its Secret thereof." Borrowing the word directly from de Brosses, Marx defines fetishism as the attribution to commodities of what are in fact social relations. The commodity fetishism observes that there is an inversion occurs in the capitalist mode of production. To best understand the inversion, the following writing by Marx approximately two decades prior to the *Capital* helps:

> It is clear that this mediator [money] becomes an actual god, for the mediator is the actual power over that which [it] mediates to me. [Its] worship becomes an end in itself. Apart from this mediation, objects lose their value. They have value only insofar as they represent it while originally it appeared that the mediation would have value only insofar as it represents objects.[16]

In the context of Marxian theory of commodity fetishism, we can rule out the possibility that the critique of film photography being fetishism is due to the fact that the photographer considers his photographs as commodity. Because digital

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[16] D. Easton and K. Guddat (trans. & ed.). (1997) "Money and Alienated Man" in *Writings of the Young Marx on Philosophy and Society*. Indianapolis: Hackett Publishing Company, p266.

photographers also treat their photographs as commodity but I have never heard any of them being accused as fetishist. So this accusation must be caused by some characteristic unique to film photography—which is film, the medium. If we follow Marx's idea of inversion as a way of critique, we must find film photographers' emphasis on the value of film to be no value at all or significantly less value than what is claimed. Because film photography consists of several steps of processes involving film, we have to analyze them separately:

1) Shooting with film. Possible advantages (or value) include slowing down the process, impossibility of seeing any immediate result (one could argue this is a disadvantage but the rationale is that without live view the photographer has to think more and be more in control of the process other than just react and adjust). I think the value claimed here is reasonable.

2) Developing the film. Developing black and white films in the darkroom or sending color film to the lab is in their own tedious processes. I haven't heard many film photographers obsessing with them per se. But many have claimed that the image latency triggers their strong anticipation and, if the result from development is positive, the strong anticipation will be awarded by extraordinary excitement. In addition, compared to the linearity of digital camera, film developed in chemistry exhibits a "S" reaction curve to light, which results more pleasing and organic extreme highlights. I think these claims are valid.

3) Optically printing the film. Before digital scanning, developed film has to be contact printed or enlarged in the darkroom by an enlarger. Any further local adjustment has to be done by dodging or burning. Compared to newer digital editing and printing technologies, there are significant limitation in the old. But digital print and darkroom print have very different characteristic. In the departments such as archival longevity and maximum dMax, it is to this day unarguable to say that analog print still has an objective and discernible edge over its digital counterpart.

4) Besides being a serial of technical processes, film photography is a visual representation. When judged as work of art, the degree of success of a given photograph depends very much on the content which the photographer wants his/her photograph to represent. Often, there are photographers who try to mitigate their works' lack of good content by emphasizing on the form to be analog. By doing so, they are essentially trying to mark up the overall value of their works than what actually is there. If this is what the critics mean by "fetishism"—a fetishism in the material process of photography but misses photography as a whole, I agree that the critique is done justifiably.

Freud outlined the scenario of his theory of sexual fetishism as a safeguard against castration anxiety. Here I quote Ben Singer's concise recapitulation of it:

> The male child, seeing for the first time the naked body of his mother, perceives the fact that the female lacks a penis. This lack contradicts his belief that all people possess a penis as he does and horrifies him because he construes the lack as indication that the mother has been castrated, and furthermore as indication that he too is in peril of a similar mutilation. The child's reaction is to disavow what he has seen. But unable to repress the evidence of castration he has perceived, he doubles his belief in the phallic woman by devising a fetish—a material object that functions as a penis-substitute, a surrogate for the mother's missing penis. Generally speaking, the fetish is an object near the place of absence—like underwear—just prior to the traumatic sight. In the oblique logic of "psychical reality," the child accepts the fetish object as substantiating the fact that the mother still possesses a penis, and as repudiating the terrifying evidence of his vision. The fetish makes the seen retrospectively unseen by arresting the look on an object, ideally one that blocks or covers up the site of absence, although the logic by which a fetish is determined may be unascertainable.[17]

By Freud's definition, photography would seem relatively unlikely to be a fetish since it is not among those objects that are near the place of traumatic absence, seen just before the primal glimpse. On the threshold of trauma, these objects represent the last moment in which an innocent, uncomplicated belief in the phallic woman existed, and they are therefore particularly attractive as fetishes.[18]

But for Christian Metz, the most significant connection between photography and fetishism is the fact that the act of taking a photograph is like the moment in which the fetish is created—both events focus on a specific space whereby relegate another space to an area excluded from vision. The absent space is adjacent to but banished from the focus of our attention. In photography, the excluded zone is the off-frame; in fetishism, it is the place of phallic absence that is averted by fixation on an object near the traumatic site. For Metz, photography's spatial size is "small," meaning not only the relatively small dimensions of the average photographs but also the lack of movement and sound—elements that, he suggests, "enlarge" a medium like film; photography's temporal size is marked by its absence of an imposed duration, which allows one to fixate on a photograph for an extended period of time. Because of these two spatio-temporal features, Metz contends that photography is well suited to function as a fetish object.[19]

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[17] Singer, Ben. (1988) "Film, Photography, and Fetish: the analyses of Christian Metz" in *Cinema Journal, Vol. 27, No. 4*, Austin: Univeristy of Texas Press, p4-22.

[18] Freud, Sigmund. (1961) "Fetishism" in *The Standard Edition of the Complete Psychological Works of Sigmund Freud, Vol. 21*, London: Hogarth Press, p155.

[19] Metz, Christian. (1985) "Photography and Fetish" in *October 34*, Cambridge: MIT Press, p82-85.

It is very unlikely that any film photographer is driven by his/her sexual desire when making photographs, although there is this undeniable satisfaction involved in the analog processes. By this token, any critique that a film photographer has fell for the pray of fetishism should by no means accuse him/her as a sexual pervert, but simply means that the accused has paid too much attention to film or has blown the value of the medium out of proportion, whereby the overall value of his/her photography is subjectively appraised as higher than what is actually deserved. We cannot answer the question "Is film photography a kind of fetishism?" with a simple "Yes" or "No." A claim on certain value in a given thing and the real value of it have to be relatively judged on a case-by-case basis.

If there is any similarity can be drawn from de Brossesian fetishism to the ones of Marx and Freud, the fetish, which is originally a representative of something else—be it an awesome and incomprehensible natural phenomenon to the savage or primitive people, people's relations in capitalism, or the normal sexual object—becomes the very object or point of arrival of symbolic human activity.

Chapter II: The Digital Era

The advent of the digital era

To understand what digital era (or digital age) is, we have to understand what event marks the beginning of it—the digital revolution. But before that, we should take a look at the term "industrial revolution" in general.

By industrial revolution, we generally refer to the one that began around 1760-1770 in Britain. But history has seen more industrial revolutions than just that particular one. Certain economists have proposed a theory of cyclic developments in modern world economy. Soviet economist Nikolai Kondratiev was the first to argue that the capitalist economy had grown in a pattern of "long waves" In his book *The Major Economic Cycles* (1925). In the 1930s, Austro-Hungarian born economist Joseph Schumpeter took up Kondratiev's ideas and named the cycles "Kondratiev waves". For Schumpeter, a Kondratiev wave usually lasts 40-60 years, arises from certain technological innovation that creates a new leading industrial and commercial sector. There have been five such cycles to the present day: the first one was the Industrial Revolution; the second the age of steam and railways; the third the age of steel, electrical and heavy engineering; the fourth the age of oil, automobile and mass production; the fifth and current wave is the age of information technology, also know as the digital age.[20]

The digital age is a 21st century period characterized by the rapid shift from traditional industry to an economy based on information technology. The advent of the information age is associated with the digital revolution,[21] which is the shift from mechanical and analog electronic technology to digital electronics which began anywhere from the late 1950s to the late 1970s with the adoption and proliferation of digital computers and digital record keeping. Central to this revolution is the mass production and widespread use of digital logic circuits, and its derived technologies, including the computer, the Internet, and digital cellular phone. As Scardigli and Bensmida observed, "Although electronic calculators have been perfected since the 1940s, in the mid-1970s they experienced a sudden expansion of performance and application, notably due to the invention of the microprocessor. Meanwhile, the costs have been dropping. Microchips are found everywhere, from automobiles and traffic control to household appliances and credit cards."[22]

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[20] Schumpeter, J. (1974) *Capitalism, Socialism and Democracy*. London: Unwin University Books.

[21] Castells, M. (1999). *The Information Age*, Volumes 1-3: Economy, Society and Culture. Cambridge (Mass.); Oxford: Wiley-Blackwell.

[22] Scardigli, Victor and Bensmida, Caryn. (1988) "Toward Digital Man" in *Design Issues, Vol. 4, No. 1/2, Designing the Immaterial Society*, pp. 152-167.

Photography industry facing the digital revolution

If the digital revolution had been a Kondratiev wave characterized by the all-around transition from analog technologies to the digital ones across all sorts of industries, the existing companies had to try to ride with the unstoppable wave instead of being washed away by it. As far as this thesis is concerned, let us focus on the photography industry, by which I mean the combination of all the manufacturers, distributors and commercial stores of cameras, lenses and other photography related products and services. Although it is neither possible or necessary to cover every trade and brand in the industry, to discuss several major industrial leading brands as examples suffices to make my point.

Nikon

On November 8, 2016, Nikon Corporation publicly issued its newest Notice of Restructuring.[23] The goal of this fundamental company-wide restructuring was to "generate profits and create value." At the time, Nikon had a "Medium-Term Management Plan" in place for the three-year period between March 31, 2016 to March 31, 2018. The target of the Plan was to achieve a net sales of 990 billion Japanese Yen (9 billion US Dollar) and an income of 65 billion Japanese Yen (almost 600 million US Dollar). However, seven months into the Plan, Nikon realized that by the pace in which they progressed, it was not possible to reach the goal. For example, their "Imaging Products Business faced a shrinking market." Given the subject matter and scope of this thesis, I can only focus my interest on Nikon's Imaging Products, which is but one of the six businesses in Nikon Corporation's portfolio. Everything concerned the Image Products Business in the Notice was as follows:

> Imaging Products Business Initiatives:
> · Reassess product strategy to focus on high value-add products and enhance profitability.
> · Focus R&D on high value-add products and enhance efficiency by increasing commonalities across products and categories.
> · Optimize sales and manufacturing structure.
> · Reassess business organization and structure in addition to rationalizing and re-assigning 350 domestic employees to reduce fixed cost.

As specified in the first and second bullet points, at Nikon, what products to manufacture and which technology to be researched on or developed is determined by whether it has high added value and profitability. The words "value-add products" reminds me of the central concept in Karl Marx's critique of political economy: the

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[23] "Notice of Restructuring," Nikon Corporation. https://www.nikon.com/news/2016/20161108_1_e.pdf, accessed on 15 July 2018.

surplus value. Surplus value is a translation of the German word "*Mehrwert*". In *The Capital*, Marx uses the term to describe the yield, profit or return on production capital invested. Marx thought that the gigantic increase in wealth and population from the 19th century onwards was mainly due to the competitive striving to obtain maximum surplus-value from the employment of labor, resulting in an equally gigantic increase of productivity and capital resources. To the extent that increasingly the economic surplus is convertible into money and expressed in money, the amassment of wealth is possible on a larger and larger scale.

The problem of explaining the source of surplus value is expressed by Friedrich Engels as follows:

> Whence comes this surplus-value? It cannot come either from the buyer buying the commodities under their value, or from the seller selling them above their value. For in both cases the gains and the losses of each individual cancel each other, as each individual is in turn buyer and seller. Nor can it come from cheating, for though cheating can enrich one person at the expense of another, it cannot increase the total sum possessed by both, and therefore cannot augment the sum of the values in circulation. (...) This problem must be solved, and it must be solved in a *purely economic way*, excluding all cheating and the intervention of any force — the problem being: how is it possible constantly to sell dearer than one has bought, even on the hypothesis that equal values are always exchanged for equal values?[24]

Marx's solution was to distinguish between labor-time worked and labor power. A worker who is sufficiently productive can produce an output value greater than what it costs to hire him. Although his wage seems to be based on hours worked, in an economic sense this wage does not reflect the full value of what the worker produces. Effectively it is not labour which the worker sells, but his capacity to work. Imagine a worker who is hired for an hour and paid $10 per hour. Once in the capitalist's employ, the capitalist can have him operate a boot-making machine with which the worker produces $10 worth of work every 15 minutes. Every hour, the capitalist receives $40 worth of work and only pays the worker $10, capturing the remaining $30 as gross revenue. Once the capitalist has deducted fixed and variable operating costs of (say) $20 (leather, depreciation of the machine, etc.), he is left with $10. Thus, for an outlay of capital of $30, the capitalist obtains a surplus value of $10; his capital has not only been replaced by the operation, but also has increased by $10.

It seems that I have digressed from photography into economics, but I think it is the best way to explain the phenomena that all camera companies are so much driven by innovation and why they are all so eager to push forward the analog-to-digital

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[24] Engels, Frederick. (1877) "Capital and Surplus Value" in *Anti-Dühring Part II, VII.* https://www.marxists.org/archive/marx/works/1877/anti-duhring/ch19.htm, accessed on 15 July 2018.

transition. In capitalism, the core concept is that the very survival and success of a business depend on the sales of its product. Companies will sell to the consumers whatever can be sold, one of them is digital camera.

Canon

Let's take a look at Canon as another example—Nikon's major business competitor in the market. Similar to Nikon's business management model, Canon has its own medium-to-long-term business planning called Excellent Global Corporation Plan.[25] This business strategy plan was initially launched in 1996. Each phase lasts four years.

Employees work for Canon's public relation department choose very non-corporate, concise and approachable wording to explain Canon's corporation plan. Although the information is much less direct than what is in the Nikon Notice of Restructuring, we can still interpret much from it. Currently, Canon is in the Phase V which is between 2016 and 2020. In this phase, Canon's foremost objective is to "establish a new production system to achieve a cost-of-sales ratio of 45%."[26] Besides increasing production efficiency, they aim to "pursue total cost reductions through the promotion of such advanced production-engineering technologies as robotics and automation."

What is of much more interest to us is the time when the digital wave washed ashore. For Phase II between 2001 and 2005, it reads that Canon "focused on strengthening product competitiveness along with the changing times, stepping up efforts to digitize its products." Here, "along with the changing times" means the advent of the digital age and implies that Canon was assessing the situation and market in order to adjust itself accordingly. But whatever Canon did as proactively as possible was for the purpose of "strengthening product competitiveness," because the ultimate goal for any company in capitalist economy is to make profit. And what rendered necessary for Canon was to "digitize its products." This should refer to the launches of Canon EOS D30 and Canon EOS-1D respectively in 2000 and 2001.

While I found reading a company's strategic plan was the best way in understanding their internal motivation, all the advertisement and marketing campaigns they had launched externally to the public are the best source to discover what the company had done. In the case of Canon, the online Canon Camera Museum is a very good resource for a little bit archeology of camera technologies. As far as the EOS D30 is concerned, this is the information I found:

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[25] Canon Excellent Global Corporation Plan. https://global.canon/en/vision/strategies.html, accessed on 15 July 2018.

[26] In manufacturing, *cost of sales* is the sum of direct material, direct labor, and factory overheads incurred in making a product. —Business Dictionary

> The EOS D30 is a popularly priced digital SLR camera with a 3.25 million pixel CMOS sensor that accepts all the myriad lenses in the EF series. It is designed for serious amateurs, business and professional photographers. It could be called the "Next Generation Standard Digital SLR". The EOS user can use the D30 just as he uses his EOS film cameras. When a 16MB type CF card bundled with the EOS D30 is used, approximately 10 frames can be taken (Large/Fine). In addition to the standard 16MB card, 8, 30, 48,64 and 128MB cards are available.[27]

All marketing strategies emphasize the features of the product while conceal the ultimate goal that the business wants to make from the consumers as much profit as possible. Here we can see, Canon did it without exception. The emphasis on EOS D30's compatibility with "all the myriad lenses in the EF series" and the reassurance that the "EOS user can use the D30 just as he uses his EOS film cameras" are worth of our attention. The camera manufacturer, driven by the ultimate goal of making profit, promotes to the consumers its digital-revolution-adapting product, whereby further accelerates the digital revolution without giving any justification. Let us look at what happened to Canon EOS-1D:

> EOS-1D was designed to meet the rigorous demands of professional news, sports and studio photographers. It delivers enhanced image quality and responsiveness through a newly developed large-size, high resolution CCD sensor. EOS-1D inherits the same outstanding levels of basic functionality and operability as Canon's top-of-the-line conventional film SLR model EOS-1V.[28]

If the new kid on the street Canon EOS-1D only could do the same as what the existing top-of-the-line film SLR EOS-1V did, why did Canon bother to make and sell it? It was not because at the time there was much profit to make in the new digital photography, but because Canon could not afford the possibility to lose its potential market share by not joining the competition.

Fast forward into the present day. Decades into the digital era, we find ourselves very much used to the every so often new camera launches by Canon or Nikon. These global brands themselves have been defining what business success means to us, and their marketing campaigns everywhere have been inculcating us what new photographic equipment we absolutely need to own. So it might seem to be less believable that such influential companies once had to adapt and adjust their businesses in order to survive. To make my point more persuasive, let us now take a look at Kodak.

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[27] Canon Camera Museum. Canon EOS D30. https://global.canon/en/c-museum/product/dslr779.html, accessed on 15 July 2018.

[28] Canon Camera Museum. Canon EOS-1D. https://global.canon/en/c-museum/product/dslr780.html, accessed on 15 July 2018.

Kodak:

Often called the Google of its day, Kodak was the third largest company by market cap in the world. Founded in 1880, it was known for its pioneering technology and innovative marketing. In 1884, George Eastman invented roll film. By 1888, he perfected his Kodak camera—a revolutionary product that would take photography mainstream. By 1976 Kodak accounted for 90% of film and 85% of camera sales in America. In 1988, Kodak employed over 145,000 workers worldwide. Its revenues peaked at nearly $16 billion in 1996 and its profits at $2.5 billion in 1999. In January of 2012, it filed for bankruptcy, delisted from NYSE, divested its photographic film business, and most of its patents for $595 million.[29][30]

Illustration 5: Kodak Professional Digital Camera System

[29] "The last Kodak moment?" on *The Economist*. https://www.economist.com/business/2012/01/14/the-last-kodak-moment, accessed on 15 July 2018.

[30] "Now That's a Kodak Moment" on the Open Forum project of Harvard Business School Digital Initiative. http://www.hbs.edu/openforum/openforum.hbs.org/goto/challenge/understand-digital-transformation-of-business/now-that-s-a-kodak-moment.html, accessed on 15 July 2018.

What happened? The answer, of course, is digital revolution. It would be a short story if Kodak had simply failed to innovate while facing the digital revolution. In fact, the Kodak Professional Digital Camera System (see Illustration 5), later unofficially named DCS 100, was the first commercially available digital single-lens reflex camera. It was a customized camera back bearing a 1.3 megapixels image sensor, mounted on a Nikon F3 body and released by Kodak in May 1991.[31] But I have to stress here that the first of something cannot be equated to the origin of them. Knowing the first digital camera serves well when an anecdote is needed, but we cannot posit that the first is decisive to what has come after or that all digital cameras are derived from the particular Kodak DCS 100. What we can say is that, under the pressure of industry-wide transition from analog to digital, Kodak's R&D had won the race of making the first DSLR. If they had not done it, some other company would have become the winner, in a very closely following year.

Who was able to make the first digital camera was not a contest just for company's reputation. Winning the title was not the end in itself. Until the digital revolution, Kodak's brilliant "razor blade" business model was an astounding success—just as Gillette makes money on the blades, not the razors, Kodak sold cheap cameras and relied on customers buying lots of expensive film. Obviously, that model couldn't continue to work with digital cameras. Despite some struggles to adapt, the irresistible transition from film to digital has proved to be too big a challenge for Kodak's business architecture.

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[31] McGarvey, Jim. (2004) *The DCS Story: 17 years of Kodak professional digital camera systems 1987-2004*. http://www.nikonweb.com/files/DCS_Story.pdf, accessed on 15 July 2018.

Theoretical challenges related to digital photography

Before digital photography, photographs used to be something more than just representations: they were always both images and objects. It was not only the content but also the materiality of the photograph that mattered. Because of the immateriality of digital photography, theorists are challenged to rewrite most of the theories have been written on photography by people living in the analog time.

Deleteability

Unlike using film, digital photography does not cost any additional money following our initial investment into the necessary equipment. People can take as many shots as they like and delete the photographs that do not instantly charm. This deleteability represents something radically new.

From the practical aspect, many experienced photographers have advocated not to delete the digital photographs instantly, for 1) the LCD might not be the best feedback to assess whether a picture is good or bad; 2) we might learn from the bad shot down in the future if it is preserved; 3) we might grow out of the current taste wanting to delete the picture and into another taste thinking the image is good; 4) the cost of storage space has been decreasing so that the sacrifice of any photographs to save space might not be necessary.[32]

Beyond practicality, John Suler has taken the issue into consideration from the perspective of a psychologist. He suggests that the temptation to delete an image right away might reflect human being's need in covering up our mistakes.[33] If we draw connection between digital memory and human memory, this need to delete images should find its equivalence in human's intentionally forgetting things. In psychology term it is called "motivated forgetting"—a behavior in which people may forget unwanted memories, either consciously or unconsciously. There are two main classes of motivated forgetting: "psychological repression" is an unconscious act, while "thought suppression" is a conscious form of excluding thoughts and memories from awareness.[34]

If human nature sometimes wants to forget, the digital memory does not always allow us to do so. We could delete a photograph in the digital camera, but once we post it

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[32] Suler, John. (2013) "To Delete or Not to Delete" in *Photographic Psychology: Image and Psyche*. Doylestown, PA: True Center Publishing. http://truecenterpublishing.com/photopsy/article_index.htm, accessed on 15 July 2018.

[33] ibid.

[34] Weiner, Bernard. (1968) "Motivated forgetting and the Study of repression" in *Journal of Personality, Volume 36, Issue 2*. Los Angeles: University of California Press.

online its future is pretty much out of our control. Scholars have brought to our attention many cases around the world of individuals suffering due to digital memory, from losing jobs and relationships, to public embarrassment and even facing legal consequences, all because somebody unearthed what they had blogged, emailed, remarked about on Twitter, or posted on Facebook. In a sense, digital memory denies us the chance to change and evolve as well as the capability to forgive others.[35]

The digital circulation and new space-time category

Before the advent of digital photography, it took considerable time just to develop the analog photographs. Therefore the most prominent use of photographs had been recording and documenting events for viewing at a later time. As a consequence, the theories of photography had generally regarded photography as the subject to the passing of time. According to Roland Barthes, a photograph does not establish a consciousness of the "being there" of the object in the photograph, but an awareness of its "having been there." In his essay *Rhetoric of The Image*, Barthes presents a specific space-time category for photographs: "spatial immediacy" and "temporal anteriority," "the photograph being an illogical conjunction between the here-now and the there-then."[36] Geoffrey Batchen has liken photographs to time machines, as they shuttle us back and forth between past and present.[37]

In contrast, much of the traffic of digital photographs now circulates through information networks. A photograph captured with a phone camera and transmitted directly from the phone can offer an almost synchronous photographic communication between the sender and the receiver. Thus, it has become communicating the now. From "there-now" to "here-now," digital photographic communication makes possible an additional space-time category: "temporal immediacy."[38]

In the context of telecommunication, the idea of mediating presence visually can be extended through the idea of a "synchronous gaze."[39] A digital photograph which is communicated through the network between the sender and the receiver offers both

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[35] Mayer-Schönberger, Viktor. (2009) Delete: the virtue of forgetting in the digital age. Princeton and Oxfordshire: Princeton University Press, p202-203.

[36] Barthes, Roland. Heath, Stephen (sel. and trans.). (1977) *Image Music Text*. London: Fontana Press, p44.

[37] Batchen, Geoffrey. (2004) *Forget Me Not: Photography & Remembrance*, New York: Princeton Architectural Press, p97.

[38] Villi, Mikko. (2010) "Visual mobile communication: camera phone photo messages as ritual communication and mediated presence," PhD thesis, Helsinki: Aalto University School of Art and Design.

[39] ibid, p139-141.

an interpersonal experience and a common view. The act of seeing together is no longer limited to individuals who share the same space at the same time.

The new punctum

What the concept of punctum does, in practice, is to express the subjective awareness of the absence produced—somewhat paradoxically–by the visual activation of a feeling of presence.[40] According to Martin Jay, the inevitable lost time attached to all photographs causes a trauma or pain.[41] The passing of time, the fact that the person or object in the photograph existed and does not necessarily exist anymore, is a source of punctum.

As I explained in the previous section, a digital photograph which is communicated immediately via social network after its capture has a different relation to the passage of time. The "has been" is not temporally very far from the "is." In this sense, it is hard to feel the loss related to the passing of time when looking at a digital photograph taken only a moment ago. However, Mikko Villi has proposed that there is another kind of loss built into the mode of photographic communication as such. Imagine the scenario that a person travels far away from home, and he or she receives a photograph on the phone sent by his or her spouse which portrays their children at home. The children are alive but they are not there with the traveller. This picture can emotionally wound the traveller because of his yearning for the children. The children's absence in space, not in time, has thus become the new source of punctum to the traveller.[42]

Time as a source of punctum in a photograph is universal and permanent.[43] It never ceases and the dead cannot return. In the contrast, distance as a source of punctum is affiliated with the transience of digital photographs. When distant individuals try to establish or maintain a connection by communicating through photographs, the feeling of loss triggered by the photographs is strong but not permanent. The punctum diminishes as the distance diminishes. Once the traveller is back home, the punctum triggered by the distance is gone.

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[40] Villi, M. and Stocchetti, M. (2011) "Visual mobile communication, mediated presence and the politics of space" in *Visual Studies*, 26(2): p108.

[41] Jay, Martin. (1994), *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought*, Berkeley: University of California Press, p444.

[42] Villi, Mikko. (2014), "Distance as the New Punctum" in *Digital snaps: the new face of photography*. Ed. Larsen, Jonas and Sandbye, Mette. London, New York: I.B.Tauris, p47-66.

[43] Batchen, Geoffrey. (2007), "This haunting" in Elkins, J. (ed.), *Photography Theory*, New York: Routledge: 285-6.

Chapter III: Large format photography in higher Education

When asked about his experience with large format analog photography, American photographer Stephen Shore replied, "It came about not as an aesthetic discipline, but a matter of economics." "With the color 8x10, it would cost $15 a shot—about $75 in today's money—every time I took a picture. I just decided I wouldn't take more than one picture of anything, and over time this became an extraordinary discipline— it forced me to decide what I really wanted." "I continue to work that way," he said. "Even if I'm photographing with my phone, I'll still just take one picture, because I will have figured out essentially what I want." "I don't have a prejudice against digital— that's all I use now—but I'm convinced that there are certain things, very hard to describe, that are learned by doing darkroom work," he explained. "It makes a lot of decisions physical. You learn to look at light in a way that you wouldn't if you just used a slider in Photoshop. Turning a dial, pressing a button and exposing it, taking out the processing paper and looking at it—people get a more visceral sense of the decisions they make by working in analog."[44]

What most people do not know is that since 1982 Stephen Shore has been the director and professor of the photography program at Bard College. Now that we understand where Shore stands on large format photography, it only makes sense that Bard College currently provides a course titled "Photography 201: The View Camera," which demonstrates the operation of the view camera and advanced darkroom techniques.[45]

In order to evaluate the current situation of large format photography in higher education, I have decided to survey the photography curricula in American higher education. Why the United States? One reason is because I come from there and graduated from an American photography program. It is the country of which the higher education I am most familiar with. Another reason is because of language. Although I am very much willing to research on the German higher education in Photography, I cannot really dig very deep due to the language barrier. There is one more reason. In America, art education in the college or postgraduate level does not get much public funding so that schools have to rely on students' tuition to function. It is safe to say that most of the photography programs are market oriented. They are run like businesses. Not only does a program has to have the accreditation to confer a degree at the end, it also has to have good faculty, facility, and interesting courses. Because prospective students go to school's website to check out what is offered,

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[44] Indrisek, Scott. (2017) "Stephen Shore on Why Young Photographers Need to Start with Film." https://www.artsy.net/article/artsy-editorial-stephen-shore-young-photographers-start-film, accessed on 15 July 2018.

[45] Courses at the Photography Program at Bard. http://photo.bard.edu/courses/, accessed on 15 July 2018.

most programs consider online outreach to be the first crucial battle among them to compete for student applications. Therefore we can gain a lot of insights by examining the rich online information about different programs.

Large format photography in curricula

According to the newest rankings by U.S.News & World Report, the top twelve graduate photography programs are from Yale University, School of the Art Institute of Chicago, University of California—Los Angeles, Rochester Institute of Technology, School of Visual Arts, University of New Mexico, Rhode Island School of Design, California Institute of the Arts, Arizona State University, University of Arizona, Columbia College and Maryland Institute College of Art.[46] So let us take a look at what information can be found about large format photography on each school's website.

1. Yale University School of Art:
Yale lists a course titled "Photography Art 379: Form for Content with the View Camera." Its description reads, "A course for experienced photography students to become more deeply involved with the important technical aspects of the medium, including a concentrated study of operations required in the use of view cameras, added lighting, and advanced printing techniques. Scanning and printing of negatives are included. Student work is discussed in regular critiques. Review of significant historic photographic traditions is covered. Students are encouraged to employ any previous digital training although class is primarily analog."[47]

2. School of the Art Institute of Chicago:
SAIC lists a course titled "Large-Format Camera." Its description reads, "This course introduces students to ideas and attitudes that are inherent and possible with the large-format camera. The course covers traditional uses of large-format equipment including portraiture, landscapes, still life, and architecture, while developing a more personal viewpoint. The coursework covers sheet film, the zone system, printing skills, related equipment, and individual projects using the large-format image. Available for use are 4x5 and 8x10 view cameras. Students are required to have their own light meters."[48]

3. University of California—Los Angeles:
UCLA does not publicly list the details about its photography courses, but it has a detailed equipment list. Concerning large format equipment, it has the following:

> 4x5 BLUE Kit | Calumet,150mm

[46] "Best Graduate Photography Programs" by U.S.News. https://www.usnews.com/best-graduate-schools/top-fine-arts-schools/photography-rankings, accessed on 15 July 2018.

[47] Photography Art 379, Form for Content with the View Camera. Yale School of Art. http://art.yale.edu/Art379, accessed on 15 July 2018.

[48] Courses, Photography, School of the Art Institute of Chicago. http://www.saic.edu/academics/departments/photography/courses, accessed on 15 July 2018.

Sekonic Studio Deluxe II light meter, (5) 4x5 film holders, 1 loupe, 1 shutter release, dark cloth.
4x5 GREEN Kit | Calumet,150mm,
Sekonic Studio Deluxe II light meter, (5) 4x5 film holders, 1 loupe, 1 shutter release, dark cloth.
4x5 Toyo Kit #1 | Toyo Field 45 CF | 150 mm
Sekonic Studio Deluxe II Light meter, (5) 4x5 film holders, 1 loupe, 1 shutter release, dark cloth.
4x5 Toyo Kit #2 | Toyo Field 45 CF | 150 mm
Sekonic Studio Deluxe II Light meter, (5) 4x5 film holders, 1 loupe, 1 shutter release, dark cloth.
4x5 Toyo Kit #3 | Toyo Field 45 CF | 150 mm
Sekonic Studio Deluxe II Light meter, (5) 4x5 film holders, 1 loupe, 1 shutter release, dark cloth.
8x10 Large Format Calumet, Nikon 300mm, (6) 8x10 film holders, 1 loupe
8x10 Large Format Pinhole Box Camera[49]

4. Rochester Institute of Technology

RIT lists the titles of its photography courses without giving descriptions. No title of any course directly refers to large format photography. The school does not list its available photography equipment either.

5. School of Visual Arts

SVA has detailed list of all its photography courses, but no course directly refers to large format photography or even analog photography in general. The school does not list its available photography equipment.

6. University of New Mexico

University of New Mexico lists a few photography courses with detailed descriptions. None of them is directly related to large format photography. The school claims to have large format cameras.[50]

7. Rhode Island School of Design

RISD lists a course titled "Large Format." Its description reads, "This studio course is designed to help students slow down and become more contemplative with their photographic practice. This darkroom based course will give students ultimate compositional control as they learn to use the large format camera. Topics covered will include using the view camera's tilt, swing, shift and rise movements to control focus, perspective and image shape. Student will also learn film exposure techniques and advanced black and white printing controls. Later in the course students will be introduced to large format digital scanning and printing workflows."[51]

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[49] Equipment, Photography, UCLA. http://www.art.ucla.edu/photography/pages/equip.html, accessed on 15 July 2018.

[50] Facilities, Photo, University of New Mexico, College of Fine Arts. http://photo.unm.edu/facilities.php, accessed on 15 July 2018.

[51] Courses, Photography, Rhode Island School of Design. https://www.risd.edu/academics/photography/courses/, accessed on 15 July 2018.

8. California Institute of the Arts

CalArts does not publicly list its photography courses. The school claims to have 8x10 inch large format camera for students to check out.[52]

9. Arizona State University

ASU does not publicly list its photography courses, nor does it list its available photography equipment.

10. University of Arizona

University of Arizona lists the titles of its photography courses without giving descriptions. No title of any course directly refers to large format photography. The school claims to have 4x5 film monorail and field cameras (see Illustration 6).[53]

Illustration 6: Student operating large format camera. University of Arizona.

11. Columbia College in Chicago

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[52] Facilities, California Institute of the Arts. https://art.calarts.edu/facilities, accessed on 15 July 2018.

[53] Resources & facilities, Photography, College of Fine Arts, The University of Arizona. https://art.arizona.edu/prospective-students/areas-of-study/photography/, accessed on 15 July 2018.

Columbia College has detailed list of all its photography courses, but no course directly covers large format photography. The school claims to have Calumet 4x5 film View Cameras.[54]

12. Maryland Institute College of Art

MICA lists a course titled "Large Format Photography." Its description reads, "This studio class explores the long tradition of the view camera in photography. The course emphasizes fundamental techniques of 4 x 5" and 8 x 10" cameras as they apply to landscape, architectural and portrait photography. Students learn to print from large format negatives in the darkroom and digital labs. Cameras are provided."[55]

Among the top twelve photography programs in America, four of them (33%) provide courses teaching how to use large format camera, and at least nine of them (75%) have large format equipment for students to borrow. What motivates the schools to do so in the digital era? I will try to give an answer in the next section.

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[54] Equipment, Facilities, Columbia College Chicago. https://www.colum.edu/academics/creative-and-media-spaces/photography-facilities.html, accessed on 15 July 2018.

[55] Photography Course List, Maryland Institute College of Art. https://www.mica.edu/Programs_of_Study/Undergraduate_Programs/Undergraduate_Course_Lists/Photography_Courses.html, accessed on 15 July 2018.

Analysis on the benefit of learning large format photography

At the beginning of this chapter, we have learnt what Stephen Shore had to say about large format photography. Shore, a decision-making educator in the photography program of Bard College, has given justification to the course titled "The View Camera" to his program. Although it is rare to find interview material directly about photography educator's opinions on large format camera, we can take a closer read at the available course descriptions. This is typically how it works in higher education: if someone wants to teach a course on large format photography, he or she firstly has to propose the content of the course to the curriculum decision-makers. Obviously, to achieve the goal of the pitch, the person has to think of all the benefits of the course for the students and write them down in the proposal. If it is accepted, the course will be listed in the curriculum for students to sign up. The content and benefits which the instructor has already written for the administration most usually become the course description to attract the interest from the students.

Yale's view camera course emphasizes the technicality of large format photography. It is for already experienced students to go even further in their involvement with photography. For School of the Art Institute of Chicago and for Maryland Institute College of Arts, large format photography introduces to students the tradition of photography and teaches them the fundamentals. For Rhode Island School of Design, large format camera is the ultimate tool with which the students learn how to be contemplative with their photographic practice.

Technicality

In terms of technicality, what are the advantages of large format camera over medium, or small camera? Unlike 35mm and medium cameras, in which the camera back and the lens are always held parallel to each other, the view camera's front (lens board) and back (film plane) can be adjusted independently of each other. An infinite number of view-camera configurations are possible, and they all come from four kinds of movement: the rise and fall, the shift, the tilt, and the swing of the lens board and the film plane (see Illustration 7).[56] The movements allow large format photographers an extraordinary degree of control over the composition of the photograph, the placement of the focal plane, depth of field, correction of perspective distortion, etc.
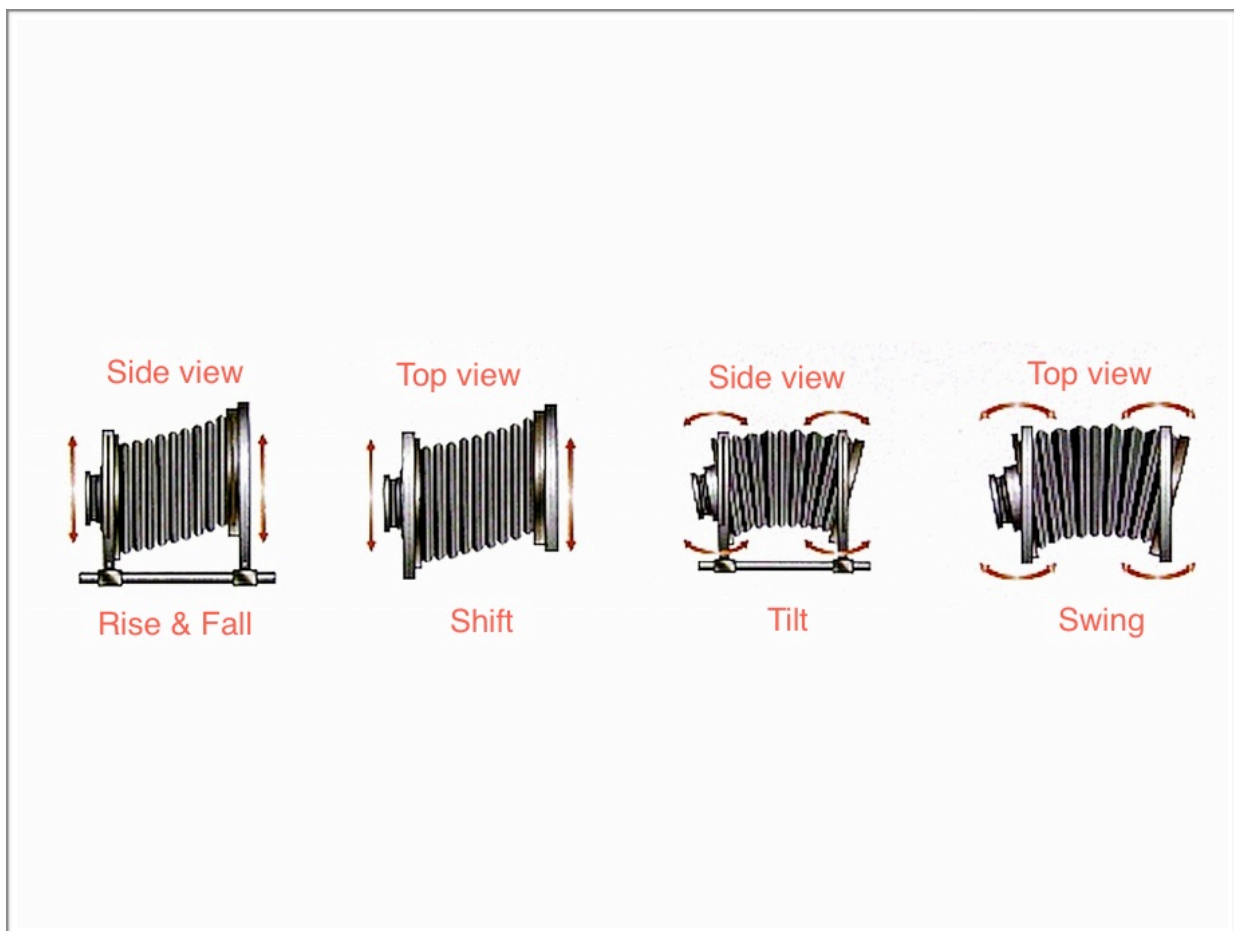

Illustration 7: View camera possible movements

56 Simmons, Steve. (1987) *Using the View Camera: A creative guide to large format photography*. New York: AMPHOTO, p8.

One great example that more sophisticated techniques can be applied to photography when shooting with a view camera is the Scheimpflug Principle. Captain Theodor Scheimpflug was an Austrian Army and Naval officer who was keen to use aerial photography employing balloon-suspended cameras to make accurate maps. In order to achieve this he needed to correct perspective distortion in the photographs because the camera did not look straight down. In 1904 he obtained a British Patent describing a number of methods for accomplishing his intended tasks.[57] The Scheimpflug Principle states that the image plane, the lens plane and the plane of focus must intersect along a common line—the Scheimpflug intersection (see Illustration 8). According to it, when view camera photographers keep the film plane upright, tilting the lens plane allows them to control where the plane of focus falls.
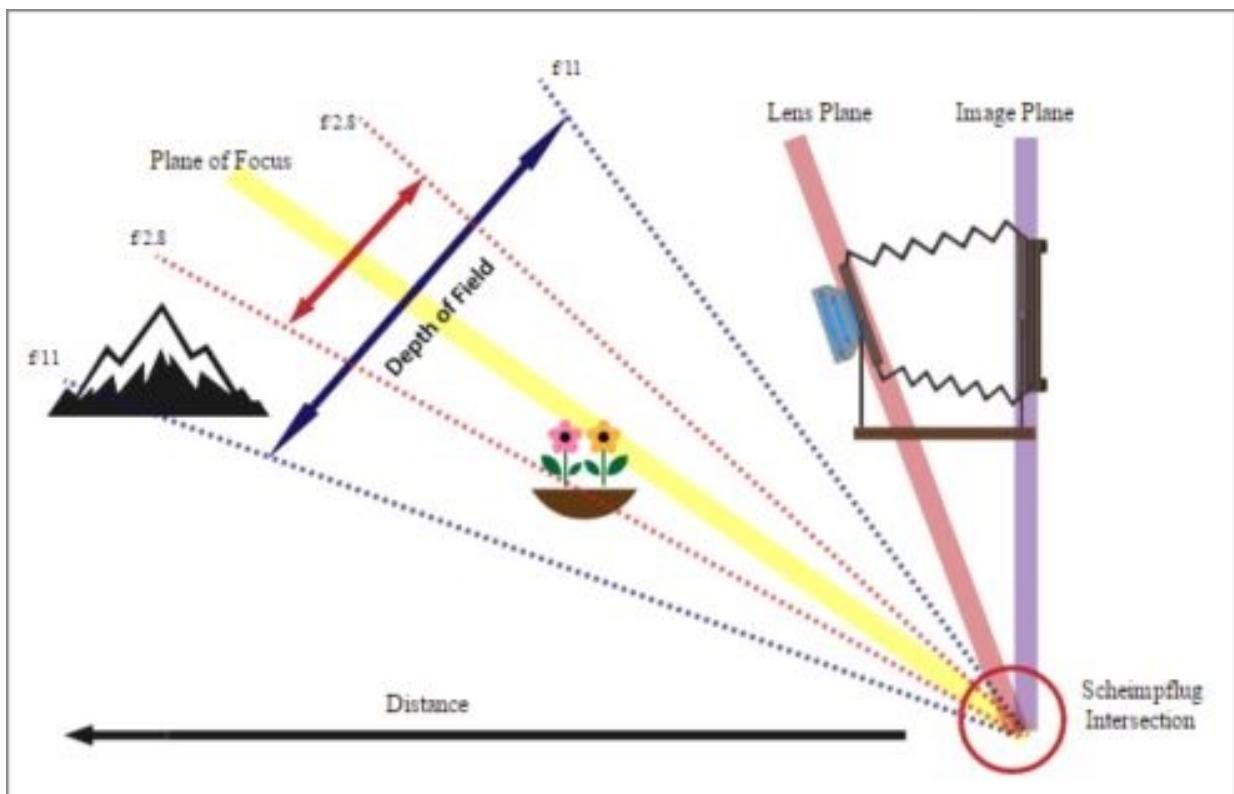

Illustration 8: The Scheimpflug Principle

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57 Merklinger, Harold. (2010) *Focusing the View Camera: A scientific way to focus the view camera and estimate depth of field*. http://www.trenholm.org/hmmerk/FVC161.pdf, accessed on 20 July 2018.

Deconstructing photography one step at a time

Because it is not a black box with all the automatic functions have already integrated in, the view camera has a reputation for demanding a lot of self-discipline from the photographer. If the shoot is not in the studio, the camera is usually not put together until the shooting location has been reached. Therefore the photographer has to remember to bring all the parts and necessary accessories, such as camera parts, bellows, lenses, film holders (previously loaded), cable release, dark cloth, focusing loupe, tripod, light meter, filters. When the exposure is made, view camera does not record any camera settings automatically, not even the most basic date and time information. Therefore a large format photographer usually has a notebook to write down every piece of information that will be critical in helping him/her evaluate the final result.

Working with a view camera is a slow process that demands careful attention and dedication to detail. Having spent considerable time to set up the camera, the photographer has to employ all the necessary movements of the view camera to compose the photograph while looking at the upside-down image on the ground glass. He or she has to manipulate the plane of focus and predict the depth of field by calculation. He or she has to measure the lighting condition and accordingly decide the optimal exposure settings. Then he or she loads the film holder and makes the exposure. This one-step-at-a-time process essentially deconstructs photography as a technological mystery established by the foolproof modern digital cameras.

Conclusion

Large format photography refers to the photographic practice that utilizes a large light sensitive surface to capture visual information. Because by definition this surface size has to be 4x5 inches or larger, as of 2018, almost all practices of large format photography are still within the context of analog photography.

When compared to their immediate predecessors, analog cameras are the kind of product that does not necessarily sport new feature but wins in reliability and future-proof. Perhaps it is for this anti-consumerist aspect that many photographers swear by the medium, not so much for nostalgia.

Besides being a serial of technical processes, analog photography is a visual representation. When judged as work of art, the degree of success of a given photograph depends on the content. There are photographers who try to mitigate the lack of good content of their works by emphasizing on the form being analog, or even large format analog. The behavior can be considered a kind of fetishism in the material process of photography, but misses photography as a whole.

The digital revolution brings us into the digital era. Like all previous industrial revolutions, the digital revolution creates the new leading industrial and commercial sector. Camera manufacturers and businesses in the photography industry are forced to adapt the transition from analog to digital in order to survive and succeed in the new market. Nikon openly pursues high profit product. Canon has proactively incorporated digital cameras to its product portfolio. Despite real efforts to adapt, the former business giant Kodak has failed to sustain its success when the unstoppable wave of digital revolution washed ashore, because its successful business model was fundamentally at odds with the digital revolution.

Meanwhile, contemporary photography theorists find themselves facing a variety of new issues since photography has become immaterial and immediate. For example, the deleteability of digital photography represents something radically new. Although many experienced photographers have advocated not to delete the digital photographs instantly for practical reasons, psychologists have suggest that the temptation to delete an image right away might reflect human being's need in covering up our mistakes. If we draw connection between digital memory and human memory, this need to delete images should find its equivalence in human's intentionally forgetting things. Even if human nature sometimes wants to forget, the digital memory does not always allow us to do so. Once we post a photograph online, its future is pretty much out of our control. Scholars have brought to our attention many cases around the world of individuals suffering, from losing jobs and relationships, to public embarrassment and even facing legal consequences, all

because somebody unearthed what they had blogged, emailed, remarked about on Twitter, or posted on Facebook.

The theory of photography has generally regarded photography as the subject to the passing of time. According to Roland Barthes, a photograph does not establish a consciousness of the "being there" of the object in the photograph, but an awareness of its "having been there." Barthes presents a specific space-time category for photographs: "spatial immediacy" and "temporal anteriority." A digital photograph captured with a phone camera and transmitted directly from the phone can offer an almost synchronous photographic communication between the sender and the receiver. Thus, digital photographic communication makes possible an additional space-time category: "temporal immediacy." A digital photograph which is communicated through the network between the sender and the receiver offers a "synchronous gaze". The act of seeing together is no longer limited to individuals who share the same space at the same time.

Punctum expresses the subjective awareness of a loss and the pain caused by the loss. According to Martin Jay, the inevitable lost time attached to all photographs causes a trauma or pain. Time as a source of punctum in a photograph is universal and permanent. In the contrast, distance as a source of punctum is affiliated with the transience of digital photographs. When distant individuals try to establish or maintain a connection by communicating through photographs, the feeling of loss triggered by the photographs is strong but not permanent. The punctum diminishes as the distance diminishes. Once the traveller is back home, the punctum triggered by the distance is gone.

If the most influential camera manufacturers have in effect accelerated the analog-to-digital transition with their proactive business strategies and relentless marketing campaigns, higher education has seemly become the last bastion for the analog photography. In order to evaluate the current situation of large format photography in higher education, I have decided to survey the photography curricula in American higher education. Among the top twelve photography programs in America, four of them (33%) provide courses teaching how to use large format camera, and at least nine of them (75%) have large format equipment for students to borrow. According to the descriptions of large format camera courses, I learned that these courses are designed to connect students with the oldest tradition of photography and teach them the most sophisticated of photography techniques and how to see the world contemplatively.

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