Introduction to the Shadow's Book

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The shadow has offered many methods of observing the world around us and has consistently provided a powerful tool for the creation of understanding and knowledge.

The cultural significance of the shadow as an important element in the story of knowledge are many. Plato's allegory of cave with captive spectators proposed that earthly knowledge is but shadow. That what we perceive through the senses is merely a shadow of the of what lies in a realm beyond. Leonardo da Vinci had a strong interest in the role of the cast shadow in astronomy. In his development of perspective, he also demonstrated shadow projection as a decisive component in the understanding of the paths of light. Johannes Kepler's use of instruments was crucial in measuring shadows to establish "*celestial physics*" as well as investigations into optics. More recently, Carl Jung's shadow as the archetypes of the unconscious, "*the dark, unlived, repressed side of the ego complex*". In mythology, literary, technological, arts and play, incidences of the shadow's contributions are numerous, and the shadow's vital role in understanding the universe, visual language, and psychology has been constant.

It is the peculiar properties of the shadow that offers a paradox; it is both something and nothing. It is an absence, sometimes described as holes in light, but it requires an object. Like echoes and reflections, it is derivative. It is in this ambiguous and fluid nature that the shadow provides a valuable means for the exploration of various subjects. It is particularly well suited to investigations related to perception and visual communication, creating forms from phenomena that may be not only external to us, but internal as well.

Throughout the history of the shadow, the manner in which the shadow has been seen, used and interpreted has often been closely aligned to form nature of the knowledge at the time. For example, the manner in which both Plato and Jung engaged with shadows is indicative of the time in which they were conceived. The method in which the shadow has been adopted as a method for knowledge creation, helps give us insights into the context in which the concepts were created.

The myth of the origin of painting is an account of the first time the shadow of a man was drawn as outline on a wall in Pliny the Elder's *Natural History.* Prior to the invention of photography, the shadow has predominantly been represented through literature, diagrams, drawings and measurements. Since that time, photography became the written language of the shadow. With the event of photography, the shadow was able to make a mark as if it were writing with pen on paper. Whether this mark resembles has a resemblance to what may be seen as the cause of the shadow, is another matter, to be discussed elsewhere.

The inception of photography provides a pivotal event in the story of the shadow. The pioneer of the photographic process William Henry Fox Talbot talks about his work being the Art of Fixing the Shadow, describing them as '*photogenic drawings*', where the image is produced by placing an object on sensitised (writing) paper and exposing it to light. Talbot consistently used the metaphor of writing in describing his photography even entitling his 1844 publication of photographs *The Pencil of Nature.*

In this work, not only does Talbot suggest that these images are made by means of the shadow of objects, he clearly alludes to the idea that the images may be authored by the objects themselves. In the same publication he states; '*The process by which natural objects may be made to delineate themselves without the aid of the artist's pencil.*' It is no coincidence that Talbot worked closely with computing pioneer Charles Babbage with whom he shared ideas on generative creation. Their vision of photography was one of a programmable image making machine.

Historically, the relationship between photography and computing has been often overlooked and now has an unanticipated relevance. The contemporary photographic universe is undeniably a computational one. Images now operate as computational code, and are an amalgamation of programable objects, experienced through computational hardware and software.

Questions of the agency of the image arise as programable imagery can be described as algorithmic. As an algorithm is a series of procedures, often automated, these increasingly become undertaken non human agents. Imagery now becomes created by and for machines as they begin to "*see for themselves*".

How this is effects contemporary photographic practice is an ongoing discussion with an ever expanding field of wide and diverse interpretations. With the current transition of the photographic towards a less human centred mode, Talbot's concepts of autonomous photomechanical reproduction presents a possible and relevant adaptation.

While the ideas of his colleague Babbage have become universal in their adoption in current computational culture, the concepts of Talbot have had a lesser influence in this sphere. Their original similarity suggests the continued relevancy of these ideas and indicates that their application to the photographic realm will prove to be a productive undertaking. By reassessing this historical turning point in the development of both computing and photography, significant insights for current photographic practice may be uncovered.

A review of Talbot's original way of working exposes the shadow as fundamental to his work. It was his lack of sketching ability on the shores of Lake Como that drew him towards creating an apparatus that would draw for him automatically. His conceptual, as well as technical quest for "*Fixing the Shadow*" lead him to the circumstances to create his hugely significant contribution to the technical field of the photographic.

Talbot's application of the concepts of generative creation to this process were highly successful at the time, as he invented the paper print process, and thus unlimited reproducibility. The reproducibility of the photographic is assured in a computational realm. But yet the shadow aspect of his concept that has not persevered other that in its obvious technical sense.

As we reassess the application of his concept of Fixing the Shadow or even general concepts of shadow we can consider the shadow in a contemporary context that may be characterised by generative creation. Babbage's involvement this original concept of generative creation makes it possible to propose a link to current algorithmic culture. Algorithmic in Talbot's world was the series of operations that allowed his form of analogue image reproduction, a contemporary interpretation of these circumstances may be digital, biological or another interpretation. Then, the continuation of Talbot's concept of fixing the shadow may now be expressed as: What is the concept of the shadow in the contemporary circumstances of generative creation?

The characteristics of contemporary culture with regards to generative creation of visual media are well suited to the original intentions of Talbot. In what has been described as post-human photography, Fox Talbot's vision of the mechanised '*pencil of nature*' making its own '*photogenic drawings*' appears to have a logical place. It is the question however, of what affordances of autonomous image creation lend itself to the expressions of '*fixing the shadow*', in what ever form that may take. As photography gravitates towards an autonomous mode, then by looking at the shadow operating within this realm it will reveal to us something of its own nature.

As mentioned, the use of the shadow reflects conventions of the time. Just as Plato, da Vinci or Jung (and numerous others) adopted the shadow to illuminate their ideas, there is an opportunity to observe what it has to reveal to us in this day. Examination of a post human shadow may reveal to us insights into the nature of the shadow itself as well of the context in which it is encountered.

As Talbot equated the processes of photographic with literary conventions and the photograph as the written language of shadow, it may now be a case of looking for the language in which the shadow is writing to us in its current language. The form of that language is to be determined, and what it is saying is as yet uncertain.

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