

# **An ANT Analysis of the Analog Photography Renaissance**

A Research Paper submitted to the Department of Engineering and Society

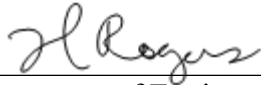
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On my honor as a University Student, I have neither given nor received  
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## **Abstract**

Photography is a widely used technology that has seen many advancements since its conception. While there is access to photography at most people's fingertips through the proliferation of smartphones and consumer-friendly digital cameras, there has been an unexpected rise in the use of film photography beginning in the late 2010s. For clarification, "film" refers to the analog medium of recording photos and a "photographer" is any individual who takes photos. This study aims to explain the rising interest in film technology through the use of the Actor-Network Theory (ANT) methodology because ANT emphasizes how connections and interactions lead to the creation of new entities, which in the case of this paper, is more film photographers. ANT does not place any special preference on human actors over non-human actors, which makes it ideal for this paper because film technology itself carries significant influence in its own revival. First, it is found that actors with audiences, such as professional photographers and famous individuals, passively spread awareness of film technology in the network of all photographers through their personal use of the technology. Some influential users will also interact with social media to actively promote film technology to their audiences. Once actors in the network who are unfamiliar with film technology, typically younger actors, have been introduced to the technology, some portion of them will be inspired to try film technology for themselves. The affordances of film will then provide itself with the agency to influence human actors into sustaining interaction between film technology and the new user. This process translates actors into film photographers, leading to a growing sub-network of film photographers within the network of photographers.

## **An ANT Analysis of the Analog Photography Renaissance**

### **Introduction**

There is an underlying commonality among many of today's iconic photographic and cinematic works that goes unrecognized by many. They were all created with, by the current standards, an antiquated medium. *Afghan Girl* by Steve McCurry was shot on Kodachrome 64, Christopher Nolan's *Inception* was filmed on Kodak Vision Color, and many professional photographers (even those who shoot for large publications such as *Time Magazine*) still use film. Although the use of photographic film is still prevalent in the professional world, film had been abandoned by the mainstream consumer in the 2000s and has without a clear catalyst, recently begun to re-enter mainstream use, especially amongst a younger generation that happens to include me. I choose to use film because it is an experience unlike any other. Great photos can be taken on digital or film, but in a world filled with screens and smart devices, it is important to disconnect when given the chance. The deliberate and tactile process of loading film, manually dialing my film camera's settings, all while knowing there is a limited number of photos that can be taken, forces me to think about my surroundings and truly grounds myself in any given moment.

Digital photography became accessible to the average consumer in the 1990s and carried three significant advantages over film: photos were instantly reviewable, more than 36 photos could be taken at a time, and costs associated with purchasing and developing film were eliminated. Analog photography thrived for a short while after digital cameras were introduced, with the market peaking in 2003 (Laurent, 2017). From that point began the degradation of the industry, which culminated with the bankruptcy of the world's largest film producer, Kodak, in 2012 (Bennet, 2012). By then, digital photography largely replaced analog photography in the

hands of consumers, but the unexpected occurred in the latter half of the 2010s: there was notable growth in the photographic film production industry. This was a signal that people were regaining interest in analog photography. Harman Technology, a manufacturer of black and white film stocks, saw film sales grow 5% year-on-year from 2014 to 2017 (Laurent, 2017). Kodak saw its film business revenues grow 21 percent in 2019 (Kodak, 2019).

Understanding why analog photography is returning to mainstream use has important implications for predicting the longevity of current technologies, determining if other dated technologies will find new life, or knowing why some older technologies have never lost prevalence. By understanding the key characteristics of film technology, relationships human actors have with film, and events related to film occurring after 2012, one can potentially generalize these characteristics, relationships, and events to use them as indicators for discovering reemerging or persistent technologies. To explore the unexpected return of the analog format, an Actor-Network Theory (ANT) analysis is conducted because the interactions between photographers, influential individuals, social media, and the affordances of film explain why there has been a renewed interest in analog photography.

### **Methodology: Actor-Network Theory**

Actor-Network Theory is employed to answer the following research question: what are the factors among various actors and their relationships that have led to the renewed interest in analog photography? ANT is a theory that emphasizes the different relations and interactions between both human and non-human entities and describes how these connections lead to the existence of new entities (Dankert, 2011). These non-human entities manifest many different forms such as objects, software, ideas, etc. A key component of ANT is how an actor is defined. Latour (1996) writes that an actor is “something that acts or to which activity is granted by

others. It implies no special motivation of human individual actors, nor of humans in general. An [actor] can literally be anything provided it is granted to be the source of an action.” Latour’s definition and the idea of the heterogeneous network dictate that human and non-human entities within a network will be treated no differently when analyzed. This concept is critical to the formation of this paper because aspects of it will focus on the agency of non-human actors, such as social media and film technology, to influence human actors. The last two terms of importance when discussing ANT are networks and translation. According to Dankert (2011), there must be an interaction between actors for a network to be sustained, if the interaction ends, the actor-network will break down. Translation is the work that is necessary to displace or transform an actor (Dankert, 2011). Translation and new actors sustaining interaction with film technology are the broad reasons that film is growing in popularity; actors with any interest in photography are being translated into actors who regularly use film technology.

ANT is appealing due to its broad definitions that make it widely applicable across many fields, however, it is not without flaws. Critics argue that the theory itself is amoral and non-human actors lack the ability to act because they have no intentionality. To address ANT’s lack of morality and inability to pursue a more ‘critical’ agenda as pointed out by Whittle & Spicer (2008), the research at hand does not pose a moral question, so the critique is moot for this research paper. And if Latour’s definition of an actor is to continue being used, there is no need for “special motivation,” i.e., intentionality. All that is of concern is the agency of an actor, the power for an actor to change other actors (Dankert, 2011).

The actor-network that will be studied will consist of photographers, professional/famous film users with audiences, social media, and the film technology itself. By studying the relationships and interactions between these actors it can be determined how this renewed

mainstream interest in film photography came to be. With that knowledge in hand, one can then look for similar interactions in different networks involving older or current technologies to predict their usage in the future.

### **Professional Photographers, Influential Users of Film, Social Media**

Professional users of film in the context of this research paper refer to working photographers and influential users of films refer to individuals who may not necessarily be photographers by profession, but they have large online followings or a noticeable presence in society. These two subgroups are placed together because being in one does not necessarily preclude from being in the other and they both serve the same purpose of introducing other actors to film.

This paper will explore two cases to display how influential users of film begin the process of translating photographers in the network into film photographers by generating interest in film technology. In 2017, Kendall Jenner appeared on “The Tonight Show” with Jimmy Fallon. In that episode, she shows off her Contax T2, a point-and-shoot film camera, and claims she feels “it’s a lot more authentic to capture a photo just on film.” Bellamy Hunt, a film camera dealer, told The Lily that not too long after the airing of that show, he started getting hundreds of emails asking to buy Contax T2s and the street price for the camera rose from about \$200 to anywhere between \$1000 and \$1500 (Clark, 2018). Due to her agency and influence, Kendall Jenner single-handedly introduced hundreds, probably thousands, of people to film photography with that short moment. People’s interest could have been peaked merely because they wished to emulate her, and/or they took belief in her opinion that film photos are more authentic and wished to also put forth more authenticity in their lives.

In a similar vein, Aziz Ansari, a well-known actor from the sitcom, *Parks and Recreation*, was interviewed by GQ Magazine in 2017 in which he went over the items that go along with him when he travels (Editors, 2017). In that interview, he discussed two film cameras that he “always” travels with and how he “loves” the pictures from those two cameras. The two cameras were the Contax T3, the successor to the Contax T2 that Kylie Jenner owns, and the Olympus Stylus Epic, a comparatively inexpensive point-and-shoot film camera. The video has well over a hundred thousand views and the two cameras caught the attention of viewers as there was discussion about them in the comments of the video. The Contax T3 has an even higher value than the Contax T2 and Aziz Ansari almost certainly played a role in boosting its popularity, but there are also others drawing attention to the Contax T series cameras such as Frank Ocean.

These previous two examples of cameras greatly increasing in value after being showcased to large audiences are not isolated events. They are indicative of what is happening at large. Many other film cameras, typically high-end ones, have greatly risen in valuation and have either sustained or continued to rise in value due to sheer demand generated by similar instances. Broadly speaking, the Leica M6, the Mamiya 7II, the Mamiya RZ67, the Pentax 67, and any Hasselblad 500 series camera are all examples of film cameras that have seen their second-hand market prices increase by double or more in the last 5 years after being showcased by, but not limited to, YouTube personalities and professional users of film such as Matt Day, Joe Greer, Willem Verbeeck, and Tyler Shields. The price action on these cameras suggests that demand for them has been increasing, which indicates that actors within the network are receptive to the idea of using film because they want to either emulate famous/influential individuals or believe their sentiments about the qualities of film and want to produce photos of greater value.

Notably, the above examples were cases in which film photography was passively promoted within the network. Kylie Jenner and Aziz Ansari were not deliberately trying to convince others to use film, but they carry enough influence that individuals will explore it of their own volition. There also exist actors who are actively promoting film photography, either because they personally have a passion for the technology and simply wish to share it or they are someone who is monetarily incentivized, such as a retailer of film and film-related accessories.

YouTube, the popular social media platform for video sharing, has afforded greater agency to some actors who are actively attempting to translate other actors into film photographers. The following two actors are mentioned because they exemplify many other actors on the YouTube platform producing videos with the intent of actively introducing users to film photography. There is a larger movement of professional film users/photographers and social media interacting to produce video or photographic content with the intent of translating actors who have some sort of interest in photography into film photographers.

Mango Street is a YouTube channel with more than 1 million subscribers in 2021 that is run by professional photographers Daniel Inskeep and Rachel Gulotta. They typically produce videos relating to the much larger market of digital photography, which is partially why they have such a large audience. Their videos target photographers of all levels from many different backgrounds. In recent years, they have produced three different videos that promote film photography: *Film Photography with Sam Elkins*, *Film vs. Digital Photography (+Giveaway)*, and *Get Started With Film Photography* (Mango Street, 2021). Those videos alone exposed hundreds of thousands of actors to film photography and reviewing the comments indicates that viewers were impressed with film photography and inspired to try shooting film themselves.



Another example of an actor using YouTube to promote film photography is Moment. Moment is a company that got its start in 2013 creating phone accessories, specifically accessories for the cameras on smartphones. Since then, they have expanded into producing YouTube videos and selling general photographic gear, cameras, lenses, camera bags, etc. In October 2020, Moment released a video on YouTube providing film photography tips for beginners, and in that video, they also announced their new store where they would be selling film, film cameras, and related accessories (Moment, 2020). At that time, they had approximately 400,000 subscribers. Although ANT does not concern itself with intent, it can be noted there was an intent to generate interest in film photography amongst actors who were unfamiliar with it because Moment was aiming to generate sales for their new film store. Due to this intent, as long as Moment sells film, it is likely that Moment will continue to employ tools that aid in the translation of actors into film photographers.

Continuing with social media, smartphone apps such as VSCO, Huji Cam, and Instagram are actors that have played a strong role in popularizing the look of film. These apps all have in-app filters, one-touch photo editing tools that afford human actors the ability to emulate film. Thus far, they have all proved to be wildly popular. Huji Cam, which is not even a social media platform, had over 22 million downloads as of 2018 and its sole purpose is to make photos look like they were taken on film before sharing on social media. The filter design in these apps is not by accident. Evelyne Morlot (2013) discovered in her master's thesis "Nostalgic consumption behaviors among young generations in photography" that Instagram users create value in their everyday life by using nostalgic effects because old-looking photos are perceived to have greater power in telling stories. One could speculate that younger actors are being drawn to film because

it affords them the ability to produce photos with these nostalgic effects and to also be more “authentic” than their peers using digital filters.

### **The Affordances of Film**

The affordances of photographic film affect how people interact with it. One reason that individuals are drawn to film is that it is physical. Film has a chemical nature that produces a different look than digital camera sensors. That alone makes it attractive. Street photographer Joe Greer put it well in an interview with Leica: “I think this younger generation is seeking after analog photography because they want something tangible, physical, something they can touch. Digital does not offer an experience like that” (Leica, 2020). A person can hold the photos they have taken and know that they tangibly exist, rather than simply being a series of 1s and 0s stored on a hard drive. The idea that film affords a greater sense of ownership to a human actor is consistent with psychological underpinnings that explain why people place greater value on physical objects over digital ones. It has been found that “it is easier to develop meaningful feelings of ownership over a physical entity than a digital one” and “we value things that we own, or anticipate owning because we see them as an extension of ourselves” (Jarrett, 2017).

Jessica Dimmock, a documentary photojournalist, once said “I think that there’s something a little more mindful and deliberate about film that’s really appealing and that’s part of the comeback” (Genova, 2017). Shooting film requires more intentionality and effort because it lacks many of the affordances of digital photography, and intuition says that the extra effort needed to shoot film would make it less desirable. However, psychological theory explains that although effort is costly, it is also valued, leading to what is known as the effort paradox. Classic views dictate that for a given reward, adding effort reduces value, but Inzlicht, Shenhav, and Olivola (2018) assert that the same outcomes can also be more valued and rewarding if more

effort was used to attain them. The effort needed to reach a goal can also be rewarding in its own right (Inzlicht et al, 2018). If it were one's goal to produce a print, a digital camera and a film camera can be used to capture similar images and then print those images. With most digital cameras, one can set the camera to automatic and use autofocus to capture an in-focus, properly exposed photo. The image can be taken, quickly checked to see if the exposure is good, uploaded to a computer, edited to one's liking, and then printed. With most film cameras, one must first choose a film stock, then manually focus the lens, meter the light in the scene to set the shutter speed and aperture for the desired exposure level, and then the photo can be taken. There is also more risk involved with film over digital because the image cannot be reviewed right away, further adding effort in checking one's composition to mitigate those risks. The photo then needs to be developed in a series of chemical baths, before it can even be seen. This can either be done at home if the photographer owns the necessary materials, or the photographer can send their film to a lab for development, which still requires time and money that is unnecessary for digital photography. Once developed, the film can be scanned to a digital file and then printed, or one could extend the physical process and exert more effort by darkroom printing, which entails projecting the film photo onto photosensitive paper and then developing the paper in a series of chemical baths to have a final printed image. Film has the agency to make the photographic process a more laborious activity and the effort paradox suggests that people are drawn to it and stick with using film for that exact reason. Individuals believe that the expended effort associated with film adds more value to their photos, even though a similar result can be had with digital photography.

Amongst those esoteric qualities of film, there are also technical reasons why actors may choose to continue using film technology after being introduced to it. Many negative films afford

superior scene rendering capabilities than the sensors in consumer digital cameras. According to the Ilford Photo Global Film Users Survey, which had over 6,800 participants from 100 countries, 75.9% of participants said they shoot film for “the aesthetics” (Ilford, 2019). The aesthetics of film often amounts to its greater image latitude, greater dynamic range in highlights of scenes, softer highlight roll-off, grain production, and favorable color rendering when compared to digital sensors. An amateur consumer can purchase a single-lens-reflex camera, a lens, film, and pay a lab to develop and scan the film for as little as \$200. To purchase a digital camera that can produce similar scene rendering results as film could cost upwards of \$1000. Professional photographers may also choose to continue using film because it reduces the time needed for post-processing. Most professional photographers that use digital cameras have the photos recorded in a RAW file format which captures significantly more data than the JPEG file format. This allows flexibility for editing the photo, but also means that time must be spent post-processing the photo because the colors will often be undesirable straight out of the camera. With film, the color science is built-in, so professional photographers only need to choose a film with colors to their liking, capture their photos, then send the film to a lab for development and scanning. Some professionals are willing to spend more effort elsewhere in the photographic process in exchange for doing no or very little post-processing on their part.

According to Dankert (2011) as long as actors keep interacting, the actor-network will look stable from the outside. However, also according to Dankert (2011), if the interaction ends, the actor-network will break down. Film’s agency and various affordances explained above are what influences actors to continually interact with film technology, thus providing a stable network of film photographers.

## **Can Film Sustain Its Return?**

Due to the nature of the topic and the lack of study around it, there are not many arguments being made that film is not making a return. It is also difficult to argue that film usage is not on the rise because sales data shows that more film is being bought. However, it can be questioned as to whether or not film's market growth is sustainable. For many professional photographers and serious amateur photographers, film will always be a staple because of its history, technical capabilities, and user experience. For others, especially non-professionals that are social media users, using film technology could merely be a short-lived phenomenon because, for the time being, it is a socially agreed upon means for conveying nostalgia and authenticity, which proves to be popular on social media. However, nostalgia and authenticity are things that people have always been drawn to, so it is unlikely that they will fall out of fashion. There is a sentiment that film will once again lose popularity because of the technical difficulties associated with using film, but it was clearly described earlier that one of the main reasons people have been returning to film is the effort associated with using it. Another argument is that film will soon die out because film processing labs will no longer have efficient means of digitizing film once commercial film scanners begin to fail and parts run out. However, with today's rapid manufacturing capabilities such as 3D-printed circuit boards and CNC machined parts, individuals can keep these machines functioning and provide new parts. It is also worth noting that one can use digital cameras to also scan film, oftentimes with more efficiency and higher resolution than dedicated film scanners.

The largest threat to film photography is the supply of intermediate-level film cameras for average actors. Currently, the only new film cameras being produced are low-quality point-and-shoots/disposables and very costly, high-end rangefinders by Leica. These two segments are

not enough to provide for the growing network of dedicated film photographers. And although the market for film photography is growing, it is still very small compared to the digital camera market and therefore not profitable enough for camera manufacturers to dedicate resources to producing an intermediate-level film camera. For the time being, the supply of intermediate-level film cameras will only dwindle as they break or get lost, unless the film photography market attains the critical mass necessary for manufacturers to profitably design and produce new film cameras. There are still repair shops dedicated to fixing film cameras and younger repair technicians are joining the scene regularly, so there is hope that the current circulating supply of film cameras can be maintained for a while.

## **Conclusion**

Actors who are unfamiliar with film technology are introduced to it through individuals promoting film, inactively or actively, on social media platforms such as YouTube and Instagram. Other actors will discover film technology in their search for nostalgia and authenticity on social media. The result of these interactions is that actors in the network will be driven to try film photography for themselves and many will be convinced to become full-fledged users of film by the affordances provided by film technology. At that point, actors who had previously been outside the sub-network of film photographers will then be fully translated into actors that regularly use film technology, thus expanding the network of film users. This is what is driving the renewed interest in film photography and as long as there is enough market supply of film and film cameras, the use of film photography will continue to grow because of the translation process outlined in this paper.

These findings have unique implications, especially within the realm of consumer research. Can it be seen if other dated technologies are being promoted by influential

individuals? Are newer technologies lacking in some areas when compared to an older version? Are there other technologies that convey a strong sense of nostalgia and authenticity? A technology other than film that fits these criteria is vinyl record technology and it has also seen a large rise in popularity in the last decade. By answering the above questions, consumer-facing companies could gain a market advantage by producing products that complement re-emerging technologies or developing new products that incorporate the favorable aspects of older technologies. This information could also provide insight in determining the lifespan of current technologies.

One could speculate that the primary catalyst of the film photography revival has been the explosive growth of Instagram which became hugely popular throughout the 2010s. It has served as an intermediary actor between those influential individuals with knowledge of film technology and those without. However, this likely cannot be said for certain unless a survey is conducted of film technology users to discover how they were first introduced to film. Future research could be conducted to determine the specific impacts of social media platforms, such as Instagram, on the usage of technologies indirectly associated with the platform.

Barring any materials shortages, film technology is here to stay and its use will continue to grow. Much of film's newfound popularity is with younger people. I believe that film was initially abandoned during the 2000s because digital cameras were brand new and novel to everyone at that time. Now, digital photography is the norm and there will always be a supply of new, young actors to which film will be a novel technology worth trying in this digital age.

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