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"Digital Fabrication and Its Meaning for Film"

Recent decades have witnessed radical changes in filmmaking technologies, particularly with the advent of CGI, which now offers entirely fabricated worlds. However, in spite of this, I argue that common understandings of what film is—or more specifically, what it means—have not fundamentally changed; nor for the most part have the framings of debates over the ontology of cinema.

For nearly 100 years, scholars have argued about whether film is essentially photographic. In recent decades scholars such as Carroll and Jarvie have charged it is not, but with the structure of their arguments still presuming an alternative, namely, that it is. Today's scholars cite digital technologies as an additional counter to the claim that cinema is photographic, in addition to past objections, for example, editing, cartoon animation, blue screen technology and other special effects. Also central in debates is whether or not photography is transparent, which is to say, whether it allows us to see things existing in other times and places, or at least attests to the fact that they do or did exist; or whether, on the contrary, it is more or less just another form of representation comparable to painting, subject to the same basic "distortions." Most of those challenging the view that film is photographic also reject the notion that photography is transparent. Arguing somewhat against the current tide, I maintain that photography is transparent, notwithstanding objections citing the possibility of digital manipulation. However, taking a cue from Cavell—and one poorly laid out in his work—I aim to show that this is not so much because of what photography physically is, but because of what "photography" has come to mean. On similar grounds I will argue—again, somewhat against the current tide—that digital technologies have not fundamentally shifted what cinematic media "are" because they have not fundamentally changed what they mean to most of us; and, moreover, that cinema, with relatively few exceptions, retains its photographic legacy, even in cases when it completely abandons photographic technologies.

Because I maintain that the meaning of film is, at this point in history, inextricably tied to the meaning of photographs; and everyday meanings, which are important when considering popular art forms, overwhelmingly uphold transparent conceptions of photography, I will begin by defending classic accounts suggesting photography is transparent, in line with what Bazin, Cavell, Santayana and Walton have said. A simple thought experiment later turned into an empirical experiment, discussed in a 2015 chapter and a forthcoming article in The British Journal of Aesthetics, illustrates the point. It begins with two paintings of Jesus in which he looks different, and a question: Who are these paintings of? When asked, everybody has so far unexceptionally said: "That's Jesus." When shown photographic stills of two different actors playing Jesus, however, people have overwhelmingly responded that they are of two different men

pretending to be Jesus. So with the paintings, they identified one individual, despite the man in the two paintings looking different. In the stills they identified up to three—two men, plus their role, i.e., Jesus. People were clearly hesitant to say that they saw Jesus in the stills because it was evident the person in the photograph cannot be Jesus, which suggests the people posing cannot be subtracted from their roles. But on the face of it, paintings should not be any different since nobody knows what Jesus looked like, and the person in the photograph could have just as easily modelled for a painter. So why the difference?

An answer lies in our concepts of photographs and paintings. By way of comparison, Cavell suggested that upon encountering a painting of a building, we take for granted that the building may be a product of imagination and may therefore have never existed. The painting does not testify to the building's existence; we acquire such knowledge through external information, as when recognizing it as one visited before. This is why Cavell said it only "accidentally" makes sense to ask what stands or once stood behind a building in a painting. However, the question is appropriate when directed towards photographs because of what "photography" has come to mean. The word has historically indicated an object showing things that exist or once existed. Thus when we understand we are encountering a photograph, as opposed to a realistic looking painting or digitally doctored image, we take for granted that the building exists or once did; and if we encounter a doctored image, we tend to question the legitimacy of calling it a photograph—a point illustrated when the Giza pyramids were repositioned to better fit a 1982 National Geographic cover, with many objecting that something unphotographic was misleadingly presented as photographic. The reason, then, that we unhesitatingly say "that's Jesus" in the paintings is we at least tacitly recognize they might be works of imagination. So even if models were used, the images are first of Jesus and only accidentally of models. Again, we can only know a model was used through information external to the painting, for example, comments in the artist's journal. By contrast, the model is internally related to the photograph—one almost wants to say analytically related in that we understand that things called "photographs," by definition, show things that exist or once did. So inasmuch as viewers understand they are encountering a photograph, they feel certain they are seeing a model, and thus inescapably see someone other than Jesus.

These observations have implications for standard narrative filmmaking, for instance, insofar as they suggest performers are not easily subtracted from roles, in line with what theorists ranging from Nicoll to Kracauer to Cavell have argued; and this understanding of photography, as I will argue, continues to shape what movies mean to us, even in a digital age when moving images can be fabricated without losing the photographic appearance of reality, if not now, then soon. What I want to argue, to begin with, is that CGI has not fundamentally changed the parameters of debates about film ontology. Long before its advent, scholars objected to cinematic ontologies

emphasizing a photographic nature on the grounds that even if photographs are transparent, cinema is not. There are clear-cut cases supporting this claim, as with the hand crafted films of Len Lye or cartoon animation, though the latter adopts traditions from photographically-based filmmaking such as editing and "shooting" styles. Leaving these cases aside, there is still no denying that filmmakers sometimes try to counterfeit reality. Yet notice that it is reality they are trying to counterfeit. "Explicit artifice is," as Cavell observes, "quite rare; not just rare, but specialized." Cavell cites expressionism and technicolor make-believes as examples—one might recall the animated dream sequence in Vertigo (1958) in which the departure from photographic realism is intentionally obvious. But most times, such departures are avoided. When filmmakers employ artifice, they generally aim to make it invisible, as with Pudovkin's famous example of using editing to create the impression of a man falling five stories. The goal here, along with that in movies ranging from the Star Wars trilogy (1977, 1980, 1983) to Jurassic Park (1993) to Forest Gump (1994) and Zelig (1983), is to produce a final product that has the photographic appearance of reality and is not conspicuous in its artifice. Doubtless someone will point out that conspicuous displays of special effects are increasingly a selling point, as with the original three Star Wars movies. However, the special effects of these movies are conspicuous not because they are artless, but because in these movies fantastical events and impossible scenes look spectacularly real.

The history of cinematic artifice is largely a history of how films have been put together with an eye to achieving the photographic appearance of reality. This remains so even in cases when the camera is bypassed either partially or fully. This suggests that the legacy of photography is not merely in the technology of filmmaking, but enters stylistically into the ways films are put together. Filmmaking is of course changing and will change further. Yet art forms do not abandon historical legacies even when relinquishing old modes of production. Again, the photographic legacy is felt even in cartoons inasmuch as animators import editing and "shooting" styles from mainstream filmmaking. It is also felt in digitally constructed moving images. As John Mullarkey notes: "lens flare—an artifact of 'conventional' filmmaking that was once avoided but eventually became a stylistic cliché of the 1960s and 1970s—is these days reproduced artificially" in computer-generated productions. This "shortfall from perfection" stands as "one attempt to emulate the imperfections of the optical in order to be real—its flaring, its blurriness." In line with this, the makers of Avatar (2009) digitally manufactured lens flare and blurriness, limited depth of field and made bright skies and sunlight on jungle leaves appear overexposed. The production team, moreover, went to lengths to help both the director and audience feel as if conventional cameras were employed. Joe Letteri, a visual effects supervisor, explains that a "whole system" was 'set up to allow Jim, as a director, to walk onto the stage as if it were a live action stage, pick up the camera, see his actors, see his characters, see his world." Rob Legato, a virtual cinematography consultant, adds: "And the camera can do anything. It

can be a crane, it can be a steady- cam, it can be all just purely handheld. ... It's basically as close to live action as one can get in a CG invented world."

Notice that while the virtual camera can, as Legato puts it, "do anything," the production team adopted a style that mostly mimics constraints of conventional cameras, and introduced optical imperfections associated with them. In terms of performance capture, they limited themselves similarly. As director James Cameron explains:

We got the best animators in the world to take all this data, which was coming from our performance capture. Then we limited their options to things that were value added like [motions of] the [non-human] tails and ears. So they took a human performance, with no diminishment whatsoever, and then added to it. So when people ask me what percentage of the actor's performance came through in the final character, I say 110%.

New technologies have produced computer-generated facsimiles convincing enough to trick would-be child-abusers on the Internet, and recently performance capture combined with a body double was used to create a fairly convincing young Arnold Schwarzenegger in Terminator Genisys (2015). Yet capturing performances with conventional cameras and recording devices may for some time remain easier and more effective than constructing micro-movements of muscle, tone, line, shadow and countless other alterations rippling through the human face, as evidenced by the fact that Schwarzenegger's young face was impassive because he was meant to be a cyborg; performance capture was still used, meaning the actor, in this case, Schwarzenegger was essential; and the process was, as one journalist reports, "incredibly labor-intensive ... and time consuming."

For such reasons, I do not think digital technologies have radically altered what movies "are" to us, or more accurately, what they mean. Meanings are not, to be sure, disconnected from technologies, so that filmmaking and photography would not mean what they do if not for the automated mechanical processes and unprecedented ease with which images can be made to show the world. However, meanings are not solely determined by technologies, much less by philosophers. Far too many philosophers neglect this last point, including even Wittgenstein, whose supposed examples of everyday language were not everyday but schematized and one might say, essentialized.

Realism, a standard established in cinema because of its development out of photographic technologies, remains a mainstay. It is what people often expect and a part of what movies mean to them, even to the point that imperfections in old ways of doing things are intentionally introduced to digitally constructed images.