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Volume 31, numéro 1-2-3, 2011

Cinéma & Technologie
Cinema & Technology

URI : <https://id.erudit.org/iderudit/1027446ar>

DOI : <https://doi.org/10.7202/1027446ar>

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Éditeur(s)

Association canadienne de sémiotique / Canadian Semiotic Association

ISSN

0229-8651 (imprimé)

1923-9920 (numérique)

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Citer cet article

Grosoli, M. (2011). Motion/Performance Capture and The Afterlife of The Index. A Reconsideration of André Bazin's "Myth of Total Cinema". *Recherches sémiotiques / Semiotic Inquiry*, 31(1-2-3), 153–173.
<https://doi.org/10.7202/1027446ar>

Résumé de l'article

L'histoire de la technologie au cinéma n'est pas une avancée progressive et linéaire vers le futur. Elle est plutôt un processus irrégulier et discontinu où le passé souvent *revient*. Les technologies de capture de mouvement et de performance en sont des exemples particulièrement probants, car leur nature numérique est loin d'être opposée à l'index photographique sur lequel – selon une vulgate assez répandue – le numérique serait censé prendre graduellement le pas. Au contraire, ces technologies intègrent l'index dans leur fonctionnement même. Qui plus est, quelques-uns des films qui leur font appel (*A Christmas Carol* par Robert Zemeckis, par exemple) semblent allégoriser ce paradoxe. Cette situation sera également l'occasion de revenir sur la conception bazinienne de l'histoire technologique du cinéma. En effet, on a souvent cru que la conception de l'histoire que défendait André Bazin était téléologique, à cause de ses prémisses idéalistes. Or, une relecture des écrits de Bazin, et tout particulièrement "Le mythe du cinéma total", montre au contraire que son idéalisme était en fait un antidote contre toute conception téléologique de l'histoire.

Motion/Performance Capture and The Afterlife of The Index. A Reconsideration of André Bazin's "Myth of Total Cinema"

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There are many good reasons to question the assumption that technological innovations follow a progressive, teleological and linear path. This is not the purpose of the present essay however, as this line of criticism has already been developed several times over and in many different ways. Instead, this essay aims to suggest that the work of André Bazin, a film critic whose overt idealism has often been reputed to support a teleological view of the history of cinema, could legitimately be read in the opposite way.

My essay will begin by mentioning some recent CGI-dominated films in which the image of technology apparently counters a straightforward teleological perspective. They are not to be intended as "representative" of any steady and comprehensive trend in contemporary filmmaking at all: rather, they are occasional symptoms pointing in the same direction as my hypothesis. Then I will introduce motion capture (mocap) and performance capture, the two techniques which currently seem to question the simplistic teleological bias the most, particularly because of the strange persistence of the photographic within their digital nature, as it were. Lastly, I will turn to Bazin's writings to draw from all that has preceded an appropriate theoretical and historical framing. In this regard, I will especially focus on his essay "The Myth of Total Cinema"², and on recent accounts of the French critic by scholars such as Tom Gunning and Tom Conley³.

Following this description, my essay may appear to have a twofold structure, an odd juxtaposition of two basically distant topics : motion/performance capture on one side, and Bazin on the other. However, there is a purpose behind this choice. The first part is to be read as the acknowledgment of *a problem*, *i.e.* of the emergence of an historical contingency (motion/performance capture) that doesn't quite fit a certain way of framing the history of cinema and its technologies. In other words, this new contingency demands a less naive framing. The second part attempts precisely to provide a better, more suitable frame for it, one borrowed from André Bazin's conceptions of cinema, of the history of cinema, and of the history of the technologies of cinema.

Cinematic Symptoms

Some of the filmmakers who have used technological innovations the most in the last decades have often scattered in their films abundant sub-textual traces of possible allegorical readings of them as well. More specifically, these allegories tend to concern both the theoretical and the historical consequences of introducing a set of technological innovations in the making of a given film. Steven Spielberg, Robert Zemeckis, and in more recent times Peter Jackson are among those who have provided most of the better known examples of this practice. My claim, then, is that these filmmakers, all of whom have collaborated with one another at some point in their careers, have not only employed extensive special effects on numerous occasions, but have also offered significant allegories with regards to their overall importance and consequences.

If we look more closely at works connected to the individuals mentioned above, it is particularly striking that a number of them point somehow and for some reasons toward the *past* rather than the future. Let us take, for instance, the case of Steven Spielberg. On the one hand, he is the executive producer of the *Transformers* trilogy (Michael Bay, 2007, 2009 and 2011), which was almost unanimously (and not exactly enthusiastically) greeted as a point of no return in CGI abuse : in it, CGI effects are employed in a disproportionate, excessive, dissonant, blunting, ultimately post-human way. On the other hand, the same Spielberg is the executive producer of J.J. Abrams's *Super 8* (2011), a film which, it can be argued, is also *about* the *Transformers* aesthetics, if only indirectly. Not only does the film's alien monster need humans to get back to the planet it was exiled from, but it also consists of a metallic collage-like aggregation that definitely reminds us of the creatures in Michael Bay's series. Not to mention that the scene of the train crash is shot in a manner that clearly recalls the most bombastic explosions in Bay's films. More generally, *Super 8* – set in 1979 in Spielberg's native Ohio and starring a group of very Spielbergian children opened to wonder and armed with a Super 8 movie camera, celluloid and Méliès-like tricks – looks like a domestic, more human, more traditionally narrative explanation, a form of *taming* of and a necessary complement to the

ruthlessly post-human *Transformers* digital aesthetics, duly retro-dated.

Next, let's briefly consider Peter Jackson. After a successful trilogy (*The Lord of the Rings*, 2001, 2002 and 2003) in which a kind of "mirroring" between the mythological/religious implication of one of its main characters (Gollum) and the technological device employed to make him (it?) visible on screen (motion capture) can be detected (see Gunning 2006), Jackson went on to direct a remake of one of the most celebrated allegories ever made on the spectacular uses of special effects and on their structural limits : *King Kong* (2005). Although it is not possible here to delve into the film's complexities in any detail, it is safe to say that the original 1933 parable is still essential in the shaping of the 2005 one. In other words, the form of technology changes, but its limits remain the same : beauty kills the beast in the digital era just as well. *The Lovely Bones* (2009), Jackson's subsequent project, is set in the 1970s and is replete with snapshots, analogical devices and the like. Indeed, photography plays a key role here. There are a few digital effects, but they only form a childish, kitsch and phony otherworldly Limbo. This supernatural, all-digital Limbo is there to show that the pictorial omnipotence of the digital, whereby one could visualize whatever one might imagine, is ultimately deceptive and disappointing. The true vocation of the digital does not lie in its seemingly unlimited possibilities for visual creation from scratch, but rather in the re-invention of the comparatively limited photographic dimension. In the film, Susie, a murdered child whose dream (in life) was to become a famous photographer, gives up her insignificant digital afterlife in Limbo to give a new meaning to her own death. And as we know from Roland Barthes (1982 [1980]), photography is *the* medium of mortality, of the "has been". By acting on earth after her departure, and using a great deal of photographic means, Susie-as-ghost looks for a different way to achieve what she could not in life, that is to punish the serial killer who murdered her and to kiss the boy she unrequitedly loved. In the film's final shot, Susie-as-ghost takes for the second time a photograph she had already taken when she was alive, a photo of herself smiling that had become her memorial picture. In so doing, she provides a new basis and justification for that smile : this time, it attests to her realization after death of the life that she will never live for real. In the film's broader allegorical design, this means that the unlimited possibilities of the digital are consistent only within the context of the limited possibilities of photography, which are typically *referential* (a term that is intended here in very broad, generic, open, possibly even vague terms, which is congruent with the film's treatment of photography).

In these examples from Spielberg and Jackson (all of which rely heavily on digital effects), it is not only the past that returns in force, but more specifically (and ironically) a photographic past filled with analogical cameras. Symptomatically, this "return" seems to point in a completely different direction than that suggested by the widespread

teleological doxa⁴, according to which photography, as a typically indexical medium (that is, according to Charles Sanders Peirce, one establishing an existential connection between sign and object, in the fashion of, say, a fingerprint), belongs to the past, while the future belongs to the digital, which is inevitably going to “take over” thanks to its unlimited creative, pictorial and graphic possibilities, whereby one can create whatever one wants. This opinion has been already refuted by many scholarly efforts, so there is little need to get back to it. Martin Lefebvre (2007), for instance, has thoroughly demonstrated that it brings along far too many theoretical and semiotic problems, most notably because, if one were to really follow Peirce, it would be wrong to assume that the photographic sign would be “merely” indexical and that CGI-generated images would not be indexical at all, since index, icon and symbol (Peirce’s most famous triad) are often tightly intertwined with each other whenever something acts as a sign. There is no such thing as a medium that is inherently indexical, nor a medium that is inherently opposed to indexicality⁵.

Mocap and Performance Capture

In this respect, it is very telling that mocap and performance capture (used extensively to animate Gollum and King Kong, among others) are undoubtedly among the most important technological innovations to have affected the movie industry in the last decade (see Grosoli and Massuet 2014). Although a number of slightly different practices can be equally called “motion capture”, it is possible to define it as follows : the movement of markers, which are placed on the body of a moving actor, are recorded by special devices placed at the borders of a three-dimensional space and are transmitted to a computer. This data is then used to animate a virtual character that does not need to look like the actual actor at all, but that will move very much like her. The movements of an overweight actor can be used to animate a digital moving image of a slim character, and the other way around. The basic principle behind performance capture follows that of motion capture, but in this case several micro-cameras are placed very close to the face of the actor to seize every nuance of her facial expressions. These techniques are often associated with 3D, as it is clearly essential to duly emphasize the “volumetric” aspect of these kinds of tools.

It can be argued rather safely that the “capture” of motion and performance capture is, at least in part, of a genuinely indexical kind : the data transmitted to the computer bears an existential connection with the movement of the captured actor. Whether this capture is of a photographic kind or not is an open question that I am not going to fully address here. However, I claim that such technologies fully comply with what distinguishes the indexical value of photography from the indexical value of paintings (and, by extension, CGI) according to Peirce, as summarized by Lefebvre. In this sense, therefore, I will claim that these

kinds of capture are photographic (though, of course, not necessarily or exclusively so).

Paintings and photographs differ in their semiotic “growth” – that is, in the way they pass from being a rheme (“a sign interpreted as the sign of some possible thing”; Lefebvre 2007 : 237) to a dicent (“a sign interpreted as the sign of a fact”; Lefebvre 2007 : 237). Of painting and photography, only the former

requires a caption or a proper name in order to acquire dicent status. Obviously, the role of the proper name is to assure that the indexical relation between painting and object be recognized or identified. [...] Conversely, photography doesn’t require a caption or a proper name in order to be interpreted as a factual sign since the knowledge that enables it to be interpreted such always accompanies it. In other words, because there is, in principle, only one mode of production for photographic images and because this mode implies a direct or genuine existential relation between the object lying in front of the lens and the print, photography – for anyone who knows this mode of production – offers itself as the representation of a fact. This is true even when the spectator doesn’t see the photographer at work with his “model” nor possesses previous acquaintance with the model in question. The collateral knowledge which makes it possible to interpret the image as a sign of existence is already included since it pertains generally to the medium and belongs to all photographs (Lefebvre 2007 : 238-239).

What is even more important, however, is the clarification that Lefebvre (2007 : 240-241) makes shortly thereafter :

Yet we shouldn’t forget that the mere fact of existence, as Peirce tells us in “A New List of Categories”, doesn’t constitute a predicate. A good example is given during the discussion with the blurred photograph of James Elkins as he sneezes. But let’s imagine that the image is blurred to the point where it is absolutely impossible to make out what has been photographed. If the photograph’s status as index remains in such a case, its interpretation changes since without any supplemental indexation it becomes impossible to judge its meaningfulness with regards to the material thing that it depicts (only those people who were in the room when the picture was taken have enough information to see the image as a dicent sign). In this regard (and in this regard alone) the image appears *senseless* logically speaking. In this context, the photograph will be interpreted as a rheme : that is, as a sign of some existing, though absolutely vague and undifferentiated, thing, as are possibilities which can be neither true nor false. Of course, this example is a limit case if we consider the bulk of photographs that exist, but it instructs us in understanding that *no single photograph can entirely exhaust the determination of its object*. Consequently, if every photograph is a potential dicent sign by virtue of its indexicality, it is also a potential rheme by virtue of the vagueness that haunts it. Therefore, its semiotic identity is relative to the way it is put to use concretely, which is a properly *pragmatic* idea if ever there was one.

If we assume that the photographic index works differently than that of painting then we must assume as a borderline case of the photographic index, *but still one nonetheless*, the case of a photograph where *there is nothing definite to be seen*. Mocap and performance capture are

precisely those cases : here the “nothing definite to be seen” is intended the way Christian Metz (1974 [1965] : 9) once put it : “movement is never material but always visual”. Indeed, the movement these technologies capture is but a rheme; it is a sign only if intended as potentiality, as it is actualized only when computer graphics turn it into some visible digital figure. So, on the one hand Lefebvre shows that, as far as photography is concerned, it is hard indeed to cut through the knot that binds indexical and icon-oriented (the rheme, as usually associated to the pictorial) biases together – even if one privileges the former, at some point the latter ends up coming into play too –; on the other hand, the movement captured by motion and performance capture fits smoothly into this inevitably gray area.

Hence, the few cinematic examples mentioned above, as well as mocap and performance capture themselves, both testify to the “incongruous” return of the photographic index even in the most triumphantly CGI-oriented of Hollywood products. It is completely misleading to think of digital imagery as something coming “after” some supposedly old-fashioned, ordinary-empirical-reality-bound photographic index in a teleological, progress-oriented way. None of these cases get rid of the photographic index; on the contrary, they are but the new digital frontier thereof.

A further case is worth considering, the veritable pioneer of mocap and performance capture : *A Christmas Carol* by Robert Zemeckis, who has directed three films using those techniques just in the first decade of the third millennium. Each of the three ghosts in this cinematic adaptation of Charles Dickens’ novel, *i.e.* the ghosts of Christmases past, present and future, stands for a feature belonging to the devices in question. Tellingly, the most innovative traits are those associated with the ghost of Christmas *past*. This ghost has no shape of his own : towards the end of his visit, his face becomes the faces of all the characters he has shown Scrooge all along, displayed one after the other in a quick sequence, each one morphing into the next. He then becomes pure light, liable to assume any possible shape – just as Tom Hanks is able to play six different characters in *The Polar Express*. It is movement that forms them all : it is the basic principles of motion capture and performance capture, whereby the same movement data can indifferently provide the “spinal tap” for many possible kinds of moving images. This ghost also enacts quite literally what the viewer experiences during a three-dimensional screening. The viewer is no more separated from the figures she sees onscreen, that is, from what the ghost himself calls “shadows of things that have been which have no consciousness of us” (a very apt definition of the cinematic moving image indeed). With 3D, the viewer has the impression of being inside the frame, and to be sharing the same space as the ghastly figures she once only saw on the distant screen. Zemeckis’s way of staging emphasizes this feature by using sweeping camera movements that fluidly connect together moments in which the

point of view of the spectator coincides with Scrooge's with moments where Scrooge appears on screen. Thus the viewer shares the same space as the images he sees.

The ghost of Christmas present compels Scrooge to watch what is going on in the house of his employee. The scene appears inside a circular spot on the floor at Scrooge's feet. That circular spot is basically a cinematic screen onto which a family melodrama is screened. And, surprisingly enough, Scrooge *identifies* with the little crippled child he sees. So what we have here is the well-known kind of schizophrenia called "cinematic identification" : what psychoanalysis calls fetishistic disavowal, or, more simply, belief : *je sais bien, mais quand même* (Metz 1982 [1977] : 69-80). I, the spectator, know very well that the one who is moving onscreen is someone else, but I pretend that I am the one onscreen suffering the hero's pain. Moreover, the 3D projection very clearly articulates the uncertain and blurred nature of the line separating the imaginary "screening" taking place inside that circular spot on the floor and the rest of room. The new immersive context does not eliminate the representational fracture that defines cinematic spectatorship, but rather re-invents and displaces it.

The ghost of *future* Christmases ironically alludes to an old acquaintance from the *past*, something that was supposedly destined to disappear as soon as the digital, with its unprecedented image-manipulation capabilities, became rampant in film production : the photographic index. This ghost only does one thing : he *indicates*. The first time we see him, he is but a silent, black shadow behind Scrooge. Near them, a gloomy catafalque treads slowly. Then the shadow moves its arm and *points at death with his finger*. Could there be a clearer and more unquestionable reference to the photographic index? Such a ghost could justifiably be seen as a literal embodiment of the depiction of the photographic index in Roland Barthes's *Camera Lucida* : a mute finger pointing at what is bygone. The future of cinema is heavily entangled with its past : far from eliminating the index, digital technology has integrated it within its pictorial realm, the most stunning examples of this integration being motion capture and performance capture.

André Bazin's "Total Cinema"

What are we to make of the many clues, easily gatherable from the films discussed above, which seemingly point toward an obvious awareness of the historical and theoretical implications of digital special effects?

In order to begin suggesting an answer, let us take one more image from another film by Zemeckis, *Forrest Gump*. At one point, the titular character played by Tom Hanks is seen sharing the same frame and interacting with US President John F. Kennedy, in a blatantly manipulated

piece of archival footage. According to Stephen Prince (1996 : 34), this image “is perceptually realistic but referentially unreal”. “Perceptually realistic” here means that

President Kennedy speaking in *Forrest Gump* is a falsified correspondence which is nevertheless built from internally valid perceptual information. Computer modelling of synthetic visual speech and facial animation relies on existing microanalyses of human facial expression and phonetic mouth articulations. The digital-effects artist used these facial cues to animate Kennedy’s image and sync his mouth movements with the scripted dialogue. At the perceptual level of phonemic articulation and facial register, the correspondences established are true and enable the viewer to accept the photographic and dramatic reality of the scene (Prince 1996 : 34).

In other words, the image looks real on the basis of the internal coherence of its parts, regardless of their referential truth.

But is this really so? Does the credibility of this image (*i.e.* the fact that it “looks real”) rely on exactly the very principles that also make the dinosaurs in Jurassic Park credible, as Prince seems to imply in his article? Doesn’t this image at least *presuppose* some existential (indexical) connection with an external referent beside its internal consistency, if only because of its black-and-white archival-footage-like look (a look that mimics the original material depicting Kennedy and emphasizes it even though the segment is digitally manipulated)? I would like to argue that what is really important in that segment (and others like it in the film) isn’t so much the fact that Tom Hanks was digitally added into some archival footage, as the fact that *Kennedy is still there*, without which that special effect would simply not have been effective at all.

This is what is suggested in Tom Gunning’s “What’s the Point of an Index?”, an essay that does not directly mention this image, but that provides several similar examples to affirm that the indexical value of an image (whether photographic, pictorial, CGI or otherwise) and its iconic value (in Peirce’s terms : a representational connection between sign and object based on “resemblance” in the broadest sense, that is, on the fact that the former shares some of the features of the latter) can hardly be separated at all (something which Lefebvre’s article would confirm as correctly Peircean). Put differently, more attention should be paid to the ways in which the index and the icon are subtly intertwined (in all kinds of images, not just in traditionally photographic ones), instead of attempting to identify clear-cut divisions between the two. Mocap and performance capture both fit this line of thought.

Importantly, in the same article (46-47) Gunning refers to André Bazin as someone who, far from having been a naïve “realist theorist” according to whom cinema is magically capable of bringing ordinary, empirical reality onscreen thanks to the objectivity provided by the photographic index, was able to develop a conception of cinema that cannot be restricted to the index alone, but rather one that is far more

articulated and doesn't discard iconic values as supposedly not essential to the photographic medium. Indeed, Bazin, who *never* used the word "index" (Gunning 2004 : 46), often made very clear that for him the photographic image is not only a sign, but something else and possibly more than that, so there can be no way for him to consider cinema as only an indexical matter by virtue of its photographic basis (46-47). In this regard, Gunning quotes an article by Bazin with which he would grapple again : "The Myth of Total Cinema".

Gunning turned to this essay a few years after the publication of "What's the Point of an Index?" in "The World in Its Own Image : The Myth of Total Cinema", an essay contained in an edited collection (*Opening Bazin*) that gathers most of the talks given at two conferences held in Paris and Yale in 2008, the 50th anniversary of the critic's death⁶. Gunning (119) acknowledges that Bazin's view of movie history ("The cinema is an idealistic phenomenon"; Bazin 1967 [1958]b : 17) is indeed idealist. But the whole matter, Gunning implies (119-120), lies in what "idealist" means : "The Myth of Total Cinema" draws an idealist historical perspective, in that it affirms that every step in the technological evolution of cinema is driven by an ideal : that of "total cinema" (121-122). Gunning (123) is right in stressing that total cinema is not some kind of *trompe-l'oeil*-like reproduction of the world. It is not a matter of duping the eye into the experience of being there. Indeed, Bazin made it very clear in "The Ontology of the Photographic Image" (an essay that Gunning (122) justly defines as "The Myth of Total Cinema"'s companion piece) that the reproductive power of the photographic image is not mimetic at all; it is not a matter of likeness, or resemblance with the referent. "No matter how fuzzy, distorted, or discolored, no matter how lacking in documentary value the image may be, it shares, by virtue of the very process of its becoming, the being of the model of which it is the reproduction; it is the model" (Bazin 1967 [1958]a : 14). In such a definition, mimesis is unambiguously ruled out.

The "it is the model" part is obviously more problematic, but when it is paired with the notion of total cinema, these two ideas revealingly shed light on one another. Gunning points out (123) that total cinema is a particular image of the world : Bazin (1967 [1958]b : 21) says it is "the world in its own image, an image unburdened by the freedom of interpretation of the artist". Such a turn of phrase is probably obscure but not at all unexplainable. On the one hand, it is easy to recognize in it one of the main points of "Ontology of the Photographic Image" (Bazin 1967 [1958]a : 13) : "For the first time, between the originating object and its reproduction there intervenes only the instrumentality of a nonliving agent. For the first time an image of the world is formed automatically, without the creative intervention of man". On the other hand, and even more importantly, it is a matter of *totality* :

For Bazin, unlike most historians of technologies, the invention of cinema

lies not in any particular technical aspect of the cinema – such as the photographic analysis of motion; the mechanical achievement of the synthesis of motion; the systems of projection; or the devising of a flexible continuous base, each of which has its own history and inventors – but rather in the ideal of their totality, their integration into a whole (each of these elements taken singularly poses simply a technical problem to be solved). In true gestalt fashion this whole equals more than the sum of its parts, and it is the total pattern that drives the invention of cinema (Gunning 2011 : 124-125).

It is a matter of recreating the impression of presence of the world as totality, something that both Maurice Merleau-Ponty and Martin Heidegger called “the worldhood of the world” (Gunning 2011 : 125). Crucially, one of the very rare attempts by Bazin to tackle the notion of perception (see Bazin 1997 [1953]) closely matches this hypothesis. It states (88) that it is wrong to consider cinema as increasingly realist as it gains colour, 3D and other features we usually ascribe to physical reality : cinema’s realist vocation indeed consists of as much of ordinary perception as possible, but this does not happen thanks to the progressive addition of individual traits of reality. It happens instead, says Bazin (88), at the global level of the interaction between the single parts : perception is first and foremost a synthesis, whereby all the different elements involved react to each other. If we call this perceptual *synthesis* – namely one in which no subjectivity on the part of the maker of the reproduction is essentially involved – “realism,” then a 3D film is not realist because it has three dimensions; rather it’s because it is realist in the first place that a film looks three-dimensional (Bazin 88). The point here is that totality comes first, not the single elements that comprise it. Perception is the key for the Merleau-Pontian and Heideggerian “worldhood of the world”, as it is itself a matter of synthetic totality. It is important to stress that, precisely as such, cinematic perception is not a matter of mimetic correspondence with our perception of empirical reality, like for instance in the case of the “correspondence-based model of cinematic representation” advanced by, among others, Stephen Prince in a cognitivist fashion (1996 : 31). What is at stake for Bazin is not the correspondence between the patterns grounding our perception of cinematic image and those grounding our perception of empirical reality. If Prince’s article proposes that model to overcome the simplistic divide between indexical referentiality and simulation, both articles by Gunning referenced in this paper deny that Bazin’s arguments were anywhere involved in that creating divide. Gunning rightly stresses that the index has no major or truly essential role in bringing forth total cinema. Rather, in “The Myth of Total Cinema”

Bazin places cinema not so much in the tradition of photography as an index, but of other 19th century devices designed to overwhelm the senses with their excessive detail, such as the panorama, the diorama, the stereoscope and ultimately the phonograph. For Bazin the painted colors and entirely non-indexical animated drawings of Reynaud’s *Pantomimes Lumineuse* are more essential to the history of cinema than the abstracted motion studies of Marey⁷ (Gunning 2004 : 47).

Idealism and Teleology Canceling Each Other

At this point, a description of the temporal perspective implied in “The Myth of Total Cinema” can no longer be postponed. It would be wrong to read this essay as the theorization of a principle towards which cinema evolves in a linear and progressive way. In fact, this essay was born precisely to oppose such an evolutionist view, and in particular that of historian Georges Sadoul, according to whom the gradual progress of material causes produced the idea of cinema. Bazin demonstrates (1967 [1958]b : 17) that “the way things happened seems to call for a reversal of the historical order of causality, which goes from the economic infrastructure to the ideological superstructure, and for us to consider the basic technical discoveries as fortunate accidents but essentially second in importance to the preconceived ideas of the inventors”. Thus the idea of “total cinema” comes first : “an approximate and complicated visualization of an idea invariably precedes the industrial discovery which alone can open the way to its practical use” (*Ibid.* : 18). And the way this idea meets the technical discoveries that are available at a certain moment in history is by no means gradual, but are rather accidental or highly discontinuous anyway. For instance:

The synthesis of simple movements studied scientifically by Plateau had no need to wait upon the industrial and economic developments of the nineteenth century. As Sadoul correctly points out, nothing had stood in the way, from antiquity, of the manufacture of a phenakistoscope or a zootrope. It is true that here the labors of that genuine savant Plateau were at the origin of the many inventions that made the popular use of his discovery possible. But while, with the photographic cinema, we have cause for some astonishment that the discovery somehow precedes the technical conditions necessary to its existence, we must here explain, on the other hand, how it was that the invention took so long to emerge, since all the prerequisites had been assembled and the persistence of the image on the retina had been known for a long time. It might be of some use to point out that although the two were not necessarily connected scientifically, the efforts of Plateau are pretty well contemporary with those of Nicephore Niepce, as if the attention of researchers had waited to concern itself with synthesizing movement until chemistry quite independently of optics had become concerned, on its part, with the automatic fixing of the image (*Ibid.* : 18-19).

The gap between the material and the ideal is due to the fact that these discoveries meant to reach for the *total* illusion, not for one step to be supplemented by subsequent steps : “hurrying past the various stopping places, the very first of which materially speaking should have halted them, it was at the very height and summit that most of them were aiming. [...] there was not a single inventor who did not try to combine sound and relief with animation of the image” (*Ibid.* : 19-20). The history of the invention of cinema is replete with historical coincidences that “can apparently in no way be explained on grounds of scientific, economic, or industrial evolution. The photographic cinema could just as well have grafted itself onto a phenakistoscope foreseen as long ago as

the sixteenth century. The delay in the invention of the latter is as disturbing a phenomenon as the existence of the precursors of the former” (*Ibid.* : 19). The overall essay is a careful reconstruction of the discontinuities, of the inexplicable delays and of the bewildering anticipations of which the history of the invention of cinema is made. However, this in no way implied that there is a gradual progression towards a perfect illusion of standing in front of ordinary, empirical reality in its fullness, simply because this perfect illusion is never to be attained.

One thing should be made clear here. Bazin nowhere explicitly declares that the “total and complete representation of reality” (*Ibid.* : 20) can never be reached. Still, the fact that he defines it as a *myth* already unambiguously implies that its concrete achievement is not only impossible, but also, and more importantly, *beside the point*. His actual point – one that is, again, not openly stated but somewhat clearly implied in his examples (such as the one above) – is that the myth of total cinema, like so many myths, is not relevant as a goal to turn to (and that’s why this side of it is absent from his essay), but as a force active within society that actively contributes to technological discoveries. In other words, material causes are not all that there is to it : ideal causes (“myths”) play a role too –, and they cannot be made to integrally derive from the former. The myth of total cinema provides an imaginary direction which is not meant to reach an end, but which rather contributes to the production of concrete effects in society along with other historical, social, economic and technical factors : “the cinema was born from the converging of these various obsessions, that is to say, out of a myth, the myth of total cinema” (*Ibid.* : 22). Bazin’s gaze does not look ahead to the imaginary actualization of this myth, but instead looks *back* to the actual traces that this myth has left behind. As such, he cannot be charged with endorsing a teleological perspective : the *telos* here is not something toward which history actually marches, but is instead a goal that the agents of history *imagine to reach*; the concrete effects obviously never coincide with the original “total” intentions, but they nevertheless always contribute in some way to the production of “something” along with other causes. In his essay, Bazin focuses at length on these concrete effects, and coherently neglects what the final, imagined *telos* should be like : he only singles it out as a void, abstract principle of totality (“the world in its own image”) to be determined only and exclusively by the *contingencies* that it contributes to through an historical process that is necessarily too wide and heterogeneous to be grasped by the ideal (or by the material, for that matter) alone.

Like many statements by Bazin, his claim that “Cinema has not yet been invented” (1967 [1958]b : 20) has to be read as a paradox, and more precisely as follows : of course cinema exists, but there is no specific technical discovery that can be said to ultimately characterize its invention (since new technical improvements keep being discovered), let alone to mark the definitive landing place and the achievement of the

ideal of total cinema. If “every new development added to the cinema must, paradoxically, take it nearer and nearer to its origins” (*Ibid.* : 20), that’s because there is no finish line to go forward to. The ideal of total cinema is not ahead, rather it has been there since the beginning; it is at the root of the technical discoveries that have engendered cinema, discoveries which have occurred in a contingent, accidental, fragmented, discontinuous way. The “worldhood of the world” is on the one hand unattainable (one can never reach the perfect illusion of total cinema), but on the other hand it is indifferently attained *every* time some invention fulfilling the myth of total cinema springs out. By no means does this refer exclusively to 1895, or to index-driven inventions⁸ : “The primacy of the image is both historically and technically *accidental*” (*Ibid.* : 21, my emphasis). And one could only illegitimately exclude mocap and performance capture from this perspective, for they treasure the movement of performances precisely because they embody the “worldhood of the world”⁹.

In this respect, it is important to point out that Bazin, right after mentioning the “recreation of the world in its own image”, writes : “an image unburdened by the freedom of interpretation of the artist or the irreversibility of time” (*Ibid.* : 21). Perhaps the “irreversibility of time” part is no less crucial than the “unburdened by the freedom of interpretation of the artist” one. In “Ontology of the Photographic Image”, he introduces the so-called “mummy complex” (Bazin 1967 [1958]a : 9-10), which refers to the drive that for Bazin has informed the whole of plastic and visual arts since ancient Egypt : specifically, it is a drive to exorcize the destructive flow of time by reproducing the appearances of empirical reality, thereby granting them a kind of immortality. In other words, the “mummy complex” postulates the inextricability of the recreation of the world in its own image on the one hand, and of the attempt to win over time on the other. And as “The Myth of Total Cinema” is “Ontology’s” companion piece, it can be argued that in the former as well the point is very much the attempt to go against the flow of time. Fredric Jameson, one of the scholars who has most convincingly inquired into the Heideggerian nature of Bazin’s metaphysics, insists (1992 : 262-271) that the worldhood mentioned by Gunning lies precisely in a re-proposition of time *against* time that is possible through *repetition*.

What should be stressed is that the reversibility of time (*i.e.*, repetition) is not only the defining core of what total cinema is supposed to be, but also strongly characterizes Bazin’s view of time and history. In other words : it strongly characterizes the various attempts to reach total cinema. Although repetition is not directly thematized in “The Myth of Total Cinema”, it is safe to say that it is an inevitable corollary of the premises illustrated so far, and as such it is most clearly discernible in other writings by Bazin, such as the ones Tom Conley has focused on to explain the subtle dialectic underlying the relationship between evolution and event in his work. By drawing very carefully upon a great

variety of articles by the French critic, Conley has demonstrated that when Bazin appeals to the concept of evolution (including the evolution of film technology), he does not have in mind a linear, quiet, constant progress, but instead “a vision of discontinuity inherent in continuity” (Conley 2011 : 35). The flow of evolution – Bazin often employs biological, geological or geographical metaphors – can be variously altered, doubled, troubled, or re-inaugurated by discontinuous events. The outcome (indeed “unburdened by the irreversibility of time”) is a highly spatialized view of time in which a present open to evolution variously intersects with strata that are still active even though they properly belong to the past. One of Bazin’s most famous “*stratigraphies*” (a term Conley (2011 : 32) borrows from Gilles Deleuze) is “*Pour en finir avec la profondeur de champ*” (1951), an article in which he traces an evolution that, in its last stage, turns *backwards* to its origins. This article shows that the kind of deep focus techniques that cinematographers like Gregg Toland and directors like Orson Welles and William Wyler introduced at the beginning of the 1940s were in fact the outcome of the development of continuity montage in the dozen years or so that followed the introduction of sound. But it was an outcome that restored in an enriched fashion a technique that, for decades, had been waiting in the shadows for its proper accomplishment : namely the deep focus that Feuillade and other silent cinema directors had already masterfully used in the 1910s (considering the technical means at their disposal). A similar technique is thus re-proposed after several years for an entirely different aesthetic purpose – one that emerged in the meantime thanks to the developments of a different technique (montage).

Likewise, the main point of “The Myth of Total Cinema” (Bazin 1967 [1958]b : 17-18) is that as far as cinema and similar practices are concerned, there is no such thing as continuous progress engendering such ideas as, say, the reproduction of empirical reality for aesthetic purposes. There is no smooth connection between the material (that is, technology) and the ideal, by which we would establish the latter as a product of the former : rather, both coexist in an unfixed, unstable, unregulated way, so the intersections between the two can only be irregular and contingent. Indeed, there are various forms of technical evolution (Bazin is obviously not denying this), but not in a linear, progressive sense, as the inherent instability of the connection between the technical and the ideal mean that they all have to grapple with various elements of the past that continue to persist, as the Muybridge example (*Ibid.* : 18) graphically confirms. In this respect, technological evolution is less a progressive march toward the future than a *landscape*, one created in a proto-Deleuzian way (Conley himself puts it so [2011 : 39-40]) through the interaction of multiple lines of evolution, whose reciprocal incommensurability is ultimately due to the gap (that only sometimes gets filled in) between the material and the ideal (or as Deleuze would say : the actual and the virtual). Mocap and performance capture, far from

supplanting the “old” photographic index, “swallow” and reinvent it. This persistence of the index within the digital – which also retroactively re-determines what the photographic index has been all along, compelling scholarly efforts to refine their sight – can be accounted for particularly well by referring precisely to Bazin’s “stratigraphics”.

“Cinema has not yet been invented!” : it was never born and never will be, but is always *re-born* every time the myth of total cinema finds its way into some technical expression. Cinema is like the myth of Icarus, which lived twice : once in the Platonic heavens (“in the soul of everyman”), and once thanks to the internal combustion engine (Bazin 1967 [1958]b : 17-18). The ideal of “total cinema” is not a comet that shows the way to all that contributes to the evolution of film technology : it is an ideal that *lives again* every time some technical innovation gives determinate, concrete shape to the indeterminate principle that it represents. As such, it can be implied that all these occurrences virtually *coexist*, even if they are distant in time. Unlike what might wrongly be assumed about Bazin, several articles prove that he deeply admired Sergei Eisenstein, and in some (for instance Bazin 1953a) he even said that *Battleship Potemkin* (1925) was a realist film, because it went as far as it could in order to reach the totality of reality with the technical means at its disposal at that specific time. This is why, in the first note he wrote after he saw Rossellini’s *Paisà*, he wrote (Bazin 1946) that we now have the *Potemkin* of the postwar era. The end is never to be reached, but the ideal it serves is concretely achieved every time that this impossible striving for totality takes shape, that is, when the accidental “miracle” of the encounter between the material and the ideal happens. If this encounter necessarily fails in terms of reaching the ideal, it is nonetheless concretely productive at a basic historical level (very simply : it produces definite technological effects). There is no real teleology in Bazin : idealism and teleology end up canceling each other, because the recreation of the world in its own image is *never* to be ultimately achieved (in other words : teleology is dismissed). There can only be failed attempts to reach it once and for all (the alleged perfection of silent cinema being the quintessential case in point : Bazin 1967 [1958]b : 21). History lies precisely in the repetition of this constitutive failure, and each time it takes place the ideal vanishes behind the concrete occurrence of the technical discovery in question (in other words : idealism is dismissed). If idealism and teleology cancel each other, and repetition is not only the ideal of negating time made real, it turns out to be precisely what replaces teleology to Bazin’s eyes.

The flip side of this “coexistence” in time of all these failed attempts is the fact that Bazin seems to imply (as in the aforementioned reference to the Icarus myth) that techniques exist *twice* : once on their own terms, and once interacting with the ideal of total cinema. Technical innovation alone plays no role in cinema : it only does so when some particular technique is re-invented, that is, when it *intersects* the ideal

of total cinema in some significant way. This is what happened with the re-invention of deep focus sketched above. Bazin even mentions a sort of “curse of the first time”. In an article violently despising Henry Koster’s *The Robe* (1953) for not quite exploiting the Cinemascope that it inaugurates, Bazin (1955b) wrote that “Something like ‘the original sin of cinema’ really exists. The law of large numbers is certainly incompatible with the fact that whenever some additional intelligence would particularly help film history, the film in question bears witness to heights of stupidity”. *The Jazz Singer* (Alan Crosland 1927) is also quoted as an example thereof.

Another never-translated article, written more or less halfway between the original 1946 version of “The Myth of Total Cinema” and its anthologized 1958 version¹⁰, takes this point much further (Bazin 1953c):

Maybe it was only due to a witticism (*jeu d’esprit*), an optical illusion of History, as fleeting as a shadow drawn by the sun, that for fifty years we have been capable of believing in the existence of cinema. Perhaps the “cinema” was only a phase in the vast evolution of technical means of reproduction that have their origin in the 19th century, with photography and the phonograph, and of which television is the most recent form. Perhaps what we call cinema only found the time to evolve toward undeniably aesthetic forms merely as the outcome of a fortuitous convergence of technical, economic and sociological circumstances. Lumière showed some insight when he refused to sell his camera to Méliès pretexting that it was a mere technical curiosity at best useful for medical doctors only. It took a second birth of the cinema for it to turn it into the spectacle it has now become. However, it is easy to imagine the evolution of this art-by-mistake brutally interrupted by the advent of a more satisfying technology such as television. One more satisfying not from an artistic perspective – which is irrelevant here –, but rather as a means for the automatic reproduction of reality. Indeed, only a puerile idealism could believe that the artistic material of the cinematic spectacle would protect it against the advantages of television whose image accomplishes the miracle of ubiquity for the modern man. (*Ibid.* : 24. My translation)

So, television, it would seem, is destined to replace cinema, because it approaches the myth of total cinema *even more so* than the cinema itself; that is, it recreates the world in its own view more effectively. However, it should be pointed out how much this is again a matter of *defeating time*, for what is at stake is *ubiquity*. Cinema is powerless against that, its artistic dimension just cannot help. Cinema, according to Bazin, has no specificity at all, it has no identity as a medium, it is not even a medium. It is a fleeting expression of the endless drive to recreate the world in its own view, of the timeless attempts to go against the flow of time. No wonder then, that in yet another article somewhat close to “The Myth of Total Cinema”, Bazin (1953d : 22) mentions 1895 as the birth of “*le fait cinématographique*”, the birth of cinematic fact and not the birth of cinema. It is deceptive to think of cinema as a medium, with its own well-defined traits and identity : as a medium, cinema is but a perspective illusion.

André Gaudreault and Philippe Marion are not so far from Bazin when they claim that cinema has no stable beginning or end, but rather multiple beginnings and multiple end points (2009 : 137). According to them, the current trend of using movie theatres to exhibit live public happenings such as opera shows, Broadway musicals, ballets, sport event, etc., is indicative of the fact that the unity of the cinematic medium is defied and ultimately denied precisely by what was supposed to nail down its supposedly stable and definite identity in the first place : the movie theatre as a public place. So Bazin with his “Myth of Total Cinema” was right : the more we go forwards, the more we are pushed backwards towards the origins. Notwithstanding several relevant differences in approach, especially with regards to the relationship between theory and history, Bazin would agree with the new film historiography, and with its belief that there is no such thing as a proper cinema and a pre-cinema ideally subordinated to it and running in a linear fashion towards subsequent stages. Bazin, though, would add that cinema itself, like everything else, is a preliminary phase striving for something unreachabe, perhaps a bit like an asymptote.

Conclusion

The first part of this essay offered a reading of some recent Hollywood films as opposing the naïve notion that, in the current digital age, the indexical power of “old” photographic cinema to faithfully reproduce the appearances of empirical reality is doomed and only to be replaced by the illusive, simulation-oriented power of digital effects. On the contrary, these films seem to compel scholarly research to find less simplistic ways to conceive of the history of cinema and cinema-related technologies, ones that take into account discontinuity, repetition, and the coexistence of the past and the present (such as the persistence of indexicality in the digital era). Unlike what is often assumed, André Bazin shared this non-teleological view of film history. In fact, as I tried to show, his allegedly teleological view of the history of cinema and its technologies was in fact a subtle way to *open up* to the specificity of contingencies, and thus move *away from* a strictly linear view of history whereby the present comes after the past and is followed by the future. Such a sequence could only be, in his view, jumbled and irregular, because what drives history forward is first and foremost *repetition*. In this sense, it may well be that the “old” photographic index fully integrates the “iconic” power of the digital (as in the case of motion/performance capture). And if Bazin’s work is especially suited to show this, it is because his theory relies far less than is generally believed on the photographic index as the alleged “essence of cinema” (which Bazin, quite simply, *never* tries to pin down).

The digital has not killed the index, but has instead offered it a second birth. And the films by former special effects whiz kids like Spielberg, Jackson and especially Zemeckis all seem to allegorically suggest the resurgence of the index and of a peculiar, disenchanting conception

of photography, or even a re-invention thereof. Zemeckis's attempts to attain "total cinema" through state-of-the-art technological means cannot be separated from a substantial return of what an evolution-driven conception of cinema would consider already overcome. Such a view of the past, the present and the future of cinema is far more on the side of discontinuity than of a continuous, progressive, teleological evolution. We should not trust fixed dates of birth or death as far as cinema is concerned : cinema is always *re-born*, as Bazin has variously implied in his writings, though perhaps nowhere as forcefully as in "The Myth of Total Cinema". He instead sketches a view of the technological history of cinema that is anything but continuous and smooth. It is far more a matter of the occasional, strictly contingent encounters between the material (that is, the technological) and the ideal. It is as well, and crucially so, a matter of repetition (notably of the necessarily failed attempts to reach "total cinema" once and for all). Cinema is "*la momie du changement*" (Bazin 1990 [1945] : 14), but we should not understand this the way Anglophone readers of Bazin typically have. It is not "change mummified" (Bazin 1967 [1958]a : 15), but rather, and more literally, "the mummy of change". Change is not mummified : it is the mummy that changes, and unexpectedly walks back again.

Notes

- 1 Singling out all these "ways" falls clearly and largely beyond the scope of this paper; suffice it to mention, however, the Brighton conference in 1978 and all that it triggered (or enhanced) with regard to "new film history".
- 2 Originally, this article had been written in 1946, and was eventually included in Bazin's 1958 anthology *Qu'est-ce que le cinéma?*. The two versions differ in some respects, as the original 1946 article was slightly modified in view of its publication in *Qu'est-ce que le cinéma?*. Since those changes were authored by Bazin himself, I have decided to refer, throughout my paper, to the 1958 version only.
- 3 Gunning and Conley are only two among the several scholars that are currently "rediscovering" Bazin away from the simplistic views of his work that have often been given in the past. The present essay does not intend at all to provide a comprehensive account of this trend, but limits itself almost exclusively to Gunning and Conley because, unlike most of the others, they have addressed "The Myth of Total Cinema" specifically and/or the issues that it raised. Naturally, many French-language contributions about Bazin have appeared lately : see for instance Joubert-Laurencin 2014, or the dossier "Ouvrons Bazin" in the 67th issue of *1895* (Albera and Le Forestier 2012).
- 4 Brunet (2008 : 43-44) has listed some of the earlier examples of this doxa, from the 1980s and 1990s.
- 5 Digital photography – *i.e.*, the production of images that are strictly similar to traditional photographs, except for the fact that they are produced by means of electronic (and not photochemical) tools – is a good case in point here.
- 6 The purpose of those conferences was also to draw the public attention on the fact that Bazin is still quite unknown to date, since only 6% of the 2600 articles he wrote during his life have found their way into anthologies or edited collections.
- 7 Indeed, "the wonderful, the sublime E. Reynaud" (Bazin 1967 [1958] : 18) was

not only a precursor of colour (20), but also someone whose “animated drawings are the result of an unremitting pursuit of an *idée fixe*” (18). As such, he seems very close to be the perfect example of the cinema pioneer according to Bazin. Marey, on the contrary, was one of those who “were only of indirect assistance to the cinema” (22), and the glass plates that were used for the camera he made were abandoned shortly thereafter (18).

8 See note 7.

9 This also seems to match Gunning’s recent plea that motion “needs to be taken more seriously in our exploration of the nature of film and our account of how film style functions. At the same time, giving new importance to movement (or restoring it) builds a strong bridge between cinema and the new media that some view as cinema’s successors” (Gunning 2007 : 48). In this regard, Alan Cholodenko’s lifelong attempt to demonstrate that there is no substantial difference between animation cinema and cinema *tout court* gains absolutely primary importance.

10 See note 2.

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Abstract

The history of film technology is not a progressive and linear march towards the future : it is rather a discontinuous, irregular process where the past *returns* more often than not. Motion capture and performance capture technologies are particularly indicative examples of this dynamic, as their digital nature is far from opposed to the indexical bias of photography that (according to a widespread doxa) the digital is supposed to gradually supplant. On the contrary, they integrate the index in their own functioning. Moreover, some of the films making use of these devices (for instance Robert Zemeckis's *A Christmas Carol*) seem to allegorize this very paradox. André Bazin has often been believed to advocate for a teleological view of history (and of the history of film technology) just because of his idealism. In fact, a close re-reading his writings, particularly of his "Myth of Total Cinema", shows that his idealism works as an "antidote" against teleological presuppositions.

Résumé

L'histoire de la technologie au cinéma n'est pas une avancée progressive et linéaire vers le futur. Elle est plutôt un processus irrégulier et discontinu où le passé souvent *revient*. Les technologies de capture de mouvement et de performance en sont des exemples particulièrement probants, car leur nature numérique est loin d'être opposée à l'index photographique sur lequel – selon une vulgate assez répandue – le numérique serait censé prendre graduellement le pas. Au contraire, ces technologies intègrent l'index dans leur fonctionnement même. Qui plus est, quelques-uns des films qui leur

font appel (*A Christmas Carol* par Robert Zemeckis, par exemple) semblent allégoriser ce paradoxe. Cette situation sera également l'occasion de revenir sur la conception bazinienne de l'histoire technologique du cinéma. En effet, on a souvent cru que la conception de l'histoire que défendait André Bazin était téléologique, à cause de ses prémisses idéalistes. Or, une relecture des écrits de Bazin, et tout particulièrement "Le mythe du cinéma total", montre au contraire que son idéalisme était en fait un antidote contre toute conception téléologique de l'histoire.

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