

Lens Flare in the Age of Digital Production

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A remarkable sequence in Steven Spielberg's thriller *Minority Report* (2002) has "pre-cop" John Anderton, played by Tom Cruise, running from the "pre-crime" authorities after it appears that he is to murder someone. He navigates a labyrinth of magnetic-levitation freeways, circa 2054, until his vehicle is diverted toward pre-crime headquarters, at which point Anderton flees his moving vehicle, jumping from car to car plummeting down a miles-long vertical track. Throughout the sequence, Spielberg's image of this outdoor action is accentuated by spots and spangles, bands and arcs of multicolored light that shift and jiggle with the action, and rotate with the angle of the shot. These light effects give the scene a beautiful visual complexity prevalent throughout the film.

The photographic and cinematic effect is called lens flare. Various lens flare effects can occur or can be contrived to occur, including glare, haloes, spots, and starbursts. All of them originate in the reflection of non-image forming light off the lens or camera interior. The most commonly exploited lens flare, called iris flare, results in a diagonal and receding line of multicolored "ghost" diaphragm shapes in the image. The more structural elements within the lens aperture, the more potential sources of reflection there are, and hence the more diaphragm "ghosts" are produced by the aberrant reflections of stray light. Previously considered a photographic defect to be avoided, lens flare came into vogue in the 1960s, especially in film, as an image-enhancing device in its own right. Lens flare can be effective in conveying the experience of facing bright or blinding light, and spaghetti Westerns of the period are as riddled with lens-flared shots of arid expanses as the Man With No Name's foes are riddled with bullets.

The odd thing about Spielberg's use of lens flare in this scene from *Minority Report*, however, is that no aberrant reflection of light in a camera lens ever produced the flare. Rather, the effects were digitally concocted and embedded into images never shot by a camera, because they too were digitally produced. The only live action filmed for this sequence is Cruise's own

movements, shot against a blue backdrop onto which was later imposed the entire futuristic cityscape through which he travels. The light sources in this outdoor scene that might have induced camera lens flare – the sun, and the many reflective surfaces of the high-tech future city – never existed, nor did the outdoors of the shot, nor even the camera whose lens flare jiggles with the friction of the freeway. All of the lens flare in the sequence, it appears, is a digital enhancement of a digital image. Indeed, a number of software packages are available (some far more sophisticated than Photoshop) that aid the creation of lens flare effects for use in digital photography and video editing. When the reflective tendencies of a pretend aperture and the angles of one or more pretend light sources are stipulated, with their distances and intensities, a complex algorithm can plot the resultant pretend lens flare, produce an image of it, and embed it in the target image. Digital lens flare is a ghost image of the ghost images that result from the actual flaring of reflected light in a camera lens.



Digital lens flare effect in *Minority Report*, Stephen Spielberg (2002)

The digital production of lens flare effects has become ubiquitous in recent years. Once you notice it the first time, you begin to see it all over television and film: in the opening credits of science fiction TV serials, in myriad TV commercials, in many films at least partially digitally produced, including animated features in which cameras may have played no role at all. The questions I wish to pursue here are: why fake lens flare digitally? What cultural work do these

image “enhancements” perform? In what follows I take guidance from Walter Benjamin’s germinal essay, “The Work of Art in the Age of Mechanical Reproduction” (Benjamin 1969). Benjamin argues, among other things, that the mechanical reproduction of images in photography and film diminishes the aura of uniqueness and authenticity that previously animated the unique work of art. The withering of the artwork’s aura, he holds, entails an unraveling of the fabric of tradition, for good or ill. Digital image production, and the role of lens flare in it, provides a telling opportunity to assess Benjamin’s analysis of the effects of mechanical reproduction, for digital production is a particularly powerful process for replacing originals with remarkably compelling copies. The implications of digital production, conversely, gain clarity when seen through the lens of Benjamin’s observations on mechanical reproduction and the waning of aura. These subjects provide an ideal opportunity also to assess Jay David Bolter and Richard Grusin’s important work on the notion of “remediation” (Bolter & Grusin 1999). I will argue that instead of quite unraveling tradition, the mechanical reproduction of images has generated its own tradition, to which the digital production of images responds. In doing so, more importantly, digitally produced imagery is transforming our conceptions of the authentic, of the realistic, and even of the real.

Mechanical Reproduction and “Traditional” Lens Flare

“The presence of the original is the prerequisite to the concept of authenticity,” Benjamin writes; he then proposes that “the whole sphere of authenticity is outside technical [...] reproducibility” (Benjamin 1969: 220). Benjamin must have painting, sculpture, and the genuineness of original handwritten manuscripts in mind, for of course the multiple instances of cast sculpture, and the multiple prints from a woodcut or other plate, all enjoy authenticity without the need for *a single* original. That is, the concept of authenticity does not depend on the uniqueness of one original work. In a footnote to this passage, Benjamin notes that the woodcut began to complicate the question of authenticity long before the invention of photography (Benjamin 1969: 243n2). He seems to assume that a multiplicity of prints undermines authenticity, but this is implausible. There may conceivably be inauthentic instances of a reproducible work, had, for example, Candy

Darling snuck into Warhol's Factory, produced some extra silk-screens of his 1963 *Four Mona Lisas*, and forged Andy's signature on them. But legitimate prints are authentic however multiple: the presence of *an* original is no more a universally necessary condition of authenticity than the production of multiple instances precludes authenticity.

What actually concerns Benjamin, rather than the production of genuine multiples, is the reproduction of a work in multiple images of it. Benjamin distinguishes between what he calls "manual" versus "process" reproduction. Manual reproduction is the forger's or the decorator's art: to fashion convincing replicas of objects, an effort in which, Benjamin writes, "the original preserve[s] all its authority [...]" (Benjamin 1969: 220). Manual reproduction may or may not be motivated by an intention to deceive. The forger's reproduction is passed off as the (or an) original, while the "knock-off" of an iconic 1950s chair design may be understood by all to be a mere reproduction. Process reproduction in photography, to contrast, employs a technical procedure to allow the proliferation of countless images of something. Unlike manual reproduction it does not pretend to replicate the original convincingly; no one would mistake a poster of the *Mona Lisa*, much less an image of that painting on a coffee mug or book bag, for the original work. This very indifference to the fidelity of the reproduction, Benjamin holds, grants process reproduction an independence from the original not possible for manual reproduction. Benjamin characterizes this independence in a number of ways: photographic reproduction can reveal "aspects of the original that are unattainable to the naked eye." Through techniques such as slow motion, the film camera "can capture images which escape natural vision." And the dissemination of images can bring the original work of art (or whatever subject matter) into situations far removed from its presence, where it may take on meanings or generate effects at odds with the identity its historical origins had provided it (Benjamin 1969: 220-21).

This latter power of the technically reproduced image in particular threatens the presence of the original. As a circulation of images replaces direct experience of the original in its presence, it becomes possible for image consumers, and perhaps more so image circulators, to transform the meanings or uses of the original, detaching it from the tradition that had

established its considered history and significance. The *Mona Lisa*, once plastered on every conceivable item of consumer junk, is more readily re-imagined as a message from the Priory of Sion than is a mere old painting in the Louvre. Benjamin famously holds that “that which withers in the age of mechanical reproduction is the aura of the work of art” (Benjamin 1969: 221). Because, as Benjamin writes, “the uniqueness of a work of art is inseparable from its being imbedded in the fabric of tradition,” its explosion into a host of images that undermine the authenticity of the original unmoors it from tradition and renders its significance an outcome of politics (Benjamin 1969: 223-24), or entertainment. While my main focus in this essay is not to interrogate critically Benjamin’s analysis of aura, it is at least worth noting that one could argue for process mechanical reproduction tending rather to bolster the “auratic” caché of the original work. Tourists line up to glimpse the actual *Mona Lisa* because a lifetime of copies of it on consumer junk prepares them to fetishize the real deal. Then again, one may argue that what the tourist in front of the painting in the Louvre sees is not so much the *Mona Lisa* as an old painting shellacked over with consumer excitement or gilded with barely relevant legend.

And indeed, Benjamin argues that photographic means of reproduction not only undermine the status of the genuine original: image reproduction technologies also alter our ways of perceiving objects and the world at large. “The manner in which human sense perception is organized,” he writes, “the medium in which it is accomplished, is determined not only by nature but by historical circumstances as well” (Benjamin 1969: 222). In the age of mechanical reproduction, the conventions for realism in images bear the mark of ways of seeing made possible by photographic and film technologies. These technologies mediate much of our perception, and the image-manipulation possibilities they provide become enmeshed with the things perceived. While “the painter maintains in his work a natural distance from reality,” Benjamin writes, “the cameraman penetrates deeply into its web” (Benjamin 1969: 233). In film, the cuts from shot to shot that have been edited into a coherent whole, and the myriad visual perspectives and effects made possible by the camera, foster an audience trained to identify seeing well with seeing like a camera. While the audience to stage performance identifies with the actor on stage, in the case of film, Benjamin writes, “the audience takes the position of the

camera” (Benjamin 1969: 228), and the perceptual enhancements the camera provides become expectations for human perception. What counts for realism no longer corresponds to, or at the very least is no longer limited to, what the so-called “naked eye” would see. When image reproduction technologies allow us to see as the complex of camera, cinematographer, and editor see, our sense of the real has been permeated with technical mediation. “[T]he sight of immediate reality,” Benjamin proposes, “has become an orchid in the land of technology” (Benjamin 1969: 233).

These considerations place “traditional” (by which I mean non-digitized) lens flare in photography and film in a striking light. A classical conception of representational fidelity would require that the realistic image carry you directly to the subject depicted, to every extent possible rendering the means of representation transparent. This was in fact the challenge photography posed to painting at its outset, that the camera could give you the real far better than the canvas, to the extent that the technical mediation of the camera seemingly disappears in the process of presenting its subject. But Benjamin makes clear that the mediations of process reproduction are by no means transparent; they instead alter the subject and our perception of it in the direction of a standard of realism dependent on photographic and cinematic methods of image-making. Lens flare was at first regarded only as an impediment to photographic transparency, so its use as an image-enhancing technique is remarkable because it foregrounds explicitly the artifactuality of the means of reproduction. It reminds the viewer that one is seeing with “camera vision,” and it highlights the artificiality of the image. Lens flare thus consciously deployed might be expected to undermine the illusion of reality the photograph may provide. But in fact it instead enhances the realism of the image, precisely because we expect from the technically reproduced image the realism of the camera lens. To see as a camera sees is to see lens flare under certain conditions, and to see lens flare as a dimension of the real. To the extent that our perception of the arid expanses of the outlaw West is mediated by cinematography, lens flare contributes to the realistic depiction of such landscapes, because our technologies of perception have built lens flare into the look of the American West.

This returns us to Benjamin's farewell to the authentic aura of the original. The depreciation of presence holds, Benjamin writes, "not only for the art work but also, for instance, for a landscape which passes in review before the spectator in a movie" (Benjamin 1969: 221). Landscape and work of art become creatures of their photographic reproduction, subject to the politicized interpreting of their significance to which, in fact, they were always subject. It would be mistaken, however, to interpret Benjamin as nostalgic for authenticity, because the fading of aura at the hands of reproduction technologies produces new landscapes, new varieties of politics for good and ill, and new possibilities for art. In a somewhat cryptic passage, he remarks that

for contemporary man the representation of reality by the film is incomparably more significant than that of the painter, since it offers, precisely because of the thoroughgoing permeation of reality with mechanical equipment, an aspect of reality which is free of all equipment. And that is what one is entitled to ask from a work of art (Benjamin 1969: 234).

I take this to mean that a reality permeated by imaging technologies becomes a "surreality" in which the perceptual effects of these technologies contribute to, rather than distort, the disclosure of the real. (Note that Benjamin interprets Dadaism and Surrealism as not very successful attempts to create perceptual revolutions really only possible in film [Benjamin 1969: 237-38].) The technologically mediated reality is real precisely to the extent that the artifice of the technology becomes "natural," or at least second nature, to us. The most faithful and transparent representation would then be that which foregrounds its technological "surreality" as no detriment to its realism. Lens flare in "traditional" photography and film is one device for bringing the fact of technical mediation to the foreground of perception, and is thereby simultaneously a means of advancing the technological elaboration of the real. We will return below to this famous and infamously obscure passage.

Digital Production and Fake Lens Flare

We can now assess the purpose of digitally produced lens flare. The easy answer is that digital lens flare is used to make never-photographed images look as if they were shot with a

camera. The real question is what cultural function is served by doctoring images in this way. Now obviously, most photographers and film makers have aspirations for the visual interest of their images, and we might simply explain the appeal of lens flare as a device for formal experimentation with the perceptual and aesthetic richness of images. Many of Spielberg's lens-flared shots in *Minority Report* are visually fascinating in their own right, even aside from the story in progress. And the layering of image-altering technologies into the visual design of the film also serves to reinforce certain futuristic and political themes on Spielberg's mind, such that the digital image manipulation is by no means a mere matter of formal play or showing off. The puzzle I think lies in the choice of *lens flare* as an adornment to digitally-produced imagery: why have the digital image look like the product of using a *bona fide* camera? More precisely, what work is performed when the digital image mimics effects that foreground the artifactuality of the camera's role?

One way of answering this question can be drawn from Jay David Bolter and Richard Grusin's fascinating study *Remediation: Understanding New Media*. They make explicit that their concept of "remediation" is not synonymous with mechanical or process reproduction in Benjamin's sense (Bolter & Grusin 1999: 73), though the relevance of their concept to my present concerns will quickly become apparent. Bolter and Grusin define remediation as "the representation of one medium in another" (Bolter & Grusin 1999: 45), as occurs, for example, in Lichtenstein's cartoon-styled paintings. They argue that in the historical unfolding of successive new technologies of representation, a specific process of remediation occurs in which "immediacy" and "hypermediacy" intersect. Each new medium of representation claims to provide more immediate access to the real, as did photography when its invention challenged the fidelity of realist painting, as did television when it superseded radio. The goal of immediacy is "to erase or render automatic the act of representation" (Bolter & Grusin 1999: 33) so that the medium disappears and the reality represented achieves full presence. At the extreme from immediacy is a "hypermediacy" which "makes us aware of the medium or media and [...] reminds us of our desire for immediacy" (Bolter & Grusin 1999: 34). Hypermediacy embodies a foregrounding of the medium of representation, as occurs in lens-flared photographs, that undermines the illusion of immediacy. And yet by multiplying and layering various means of

representation, in digital images that mimic camera realism, for example, hypermedia “seek the real by multiplying mediation so as to create a feeling of fullness, a satiety of experience, *which can be taken as reality*” (Bolter & Grusin 1999: 53, emphasis added). In short, given the seeming logical impossibility of any medium achieving the immediacy of the real, successive media accumulate the means of representation, and so represent media within media, building towards a hypermediacy that substitutes for the real. Remediation is the process by which we use successive media to re-present prior media in the perhaps hopeless effort finally to achieve immediacy via a glut of mediation.

Given this analysis, Bolter and Grusin would likely argue that the digital production of lens flare is an act of remediation in which the look of the photographic or cinematographic medium is re-presented digitally so as to substitute hypermediacy for immediacy. Adding lens flare to digital images heightens the *illusion* of reality (in the satiety of experience it provides), paradoxically enough, by making explicit appeal to the claims to immediacy of the previous medium, however much the foregrounding of that appeal simultaneously reminds us that we are looking at a (hyper) mediation rather than at the immediately real. Yet the preceding reflections provide a different way than theirs of answering the question, to repeat: what work is performed when the digital image mimics effects that foreground the artifactuality of the camera’s role? The key lies in understanding that adding digital lens flare does not heighten an *illusion* of an experience of reality; it instead *enhances* the second-order or technological realism of the image. When the technical mediation of our sense of reality is fully acknowledged, it becomes apparent that the more that the digitally produced images look like “traditional” images photographed or filmed through a lens, the more realistic, oddly enough, the images are. Their realism is parasitical upon the realism of the camera, and the most convincing camera realism will be that which builds the effects of the technology into what it represents. It is not only that had Spielberg’s future city actually been shot on a magnificently constructed actual set in natural light, with actual cameras recording actual action, the footage would or could have been marked by lens flare effects resulting from the position of the actual sun in relation to the actual angles of the actual cameras. It is not only that Spielberg wanted the digitally produced sequence to look as if it had been filmed for real. Nor only that new media are parasitic on previous media. Indeed,

Bolter and Grusin were not well prepared in 1999 to address my question, because they seem unaware of digital lens flare as a perhaps then-nascent phenomenon. They observe that “Computer graphics experts do not in general imitate ‘poor’ or ‘distorted’ photographs (exotic camera angles or lighting effects), precisely because these distorted photographs, which make the viewer conscious of the photographic process, are themselves not regarded as realistic or immediate” (Bolter & Grusin 1999: 28). Quite to the contrary, digital production of “distorted” photographs and film sequences has become ubiquitous. Spielberg’s sequence is in fact made more realistic by the integration of fake lens flare into it, it gets at the real more convincingly, not because hypermediacy is being substituted for immediacy, not because an illusion of fullness is being substituted for reality, but because our sense of reality is not now to be extricated from the variety of technical means, both natural (vision) and invented (photography and film), by means of which we perceive it. Lens flare is a second-nature component of the real, and depicting it digitally adds to the realism of an image.

Much, it turns out, hangs on how one interprets Benjamin’s cryptic passage from above. He observed that “precisely because of the thoroughgoing permeation of reality with mechanical equipment,” the film as a means of representation offers “an aspect of reality which is free of all equipment” (Benjamin 1969: 234). Bolter and Grusin are quick to misunderstand Benjamin when they contend that “Benjamin still seems to believe [...] that it is possible to get past mediation to ‘an aspect of reality which is free of all equipment’ [...]” (Bolter & Grusin 1999: 75). I do not take this at all to be Benjamin’s view or the implication of the passage. His point is that the real is so permeated with our technical means of depicting and perceiving it, that the real is at its most real when taken in via technical means. Benjamin would reject, I believe, any literal claim to there being an aspect of reality free of all equipment. Instead, the real is so technically mediated, so much “an orchid in the land of technology,” that our perception of reality is at its most realistic, is most “immediately” given to us, when the mediated second-nature of the real is made explicit in our perception of it. Bolter and Grusin are, in fact, not far from adopting this position when they suggest, as an alternative to what they misinterpret Benjamin to mean, that works of art “offer ‘an aspect of reality’ which cannot be freed from mediation” (Bolter & Grusin 1999: 75), and even more directly, when they hold, without much elaborating the point,

that “remediation can also be understood as a process of reforming reality [...]” (Bolter & Grusin 1999: 56). When one follows this line of thought through more thoroughly than they do, however, it becomes clear that adding digital lens flare to digital images does not simply provide a more convincing illusion of reality’s fullness. It instead provides a more convincing presentation of a reality so suffused with technical mediation that lens flare is a second-nature aspect of the real.

There is an instructive parallel to digital lens flare in the music industry. For some years now numerous bands have layered the dust pops and crackle of vinyl record albums into their compact disk recordings. Musicians complain that the translation of their performances into the discrete patterns of data that digital mastering entails renders their sound altogether too clean. They compensate for this antiseptis by adding in subtle degradations of the recording quality that hark back to the previous era of analog recording technology. Like digital lens flare, this technique for rendering a digital production less digitally sterile, ironically enough, only adds more digital data to the product: for the album crackle to be layered into a digital recording, it too, like fake lens flare, must be digitally mastered. In both cases digital production is held to a standard of high fidelity, that is, realism, inherited from a previous technological era. Music played from a crackling LP sounds more “real,” more like the real thing, to the ear of that era, however much that very crackle undermines the stereophonic illusion of live performance, by exposing the recording medium. (Note that the rise of lens flare as an aesthetic technique in the 1960s corresponded to the introduction of feedback and distortion in the rock recordings of that era; both serve to foreground artistic media and lend an aura of authenticity.) The crackle undermines that illusion of immediate real presence while, paradoxically, helping the music get real. Of course, many of the recording artists sampling album crackle today are too young to cherish a collection of 1960s and 70s LP’s, but this does not preclude their nostalgia for the recording sound of those decades. Digital album crackle is precisely that, an expression of nostalgia for a previous sound era, a way to add realism to digital music production by harkening back to a tradition of attempts at fidelity. But note an interesting contrast between digital lens flare and digital album crackle: lens flare is faked today because photographers and film makers in recent decades adopted lens flare as an aesthetic device, and by doing so altered, for some images, our sense of camera realism. Digital album crackle, on the other hand, mimics a feature

of the popular music recordings of recent decades that no one at the time ever wanted, and that of course no one even recorded. The recorded song did not pop and crackle, the album on the turntable did. So nostalgia for the LP sound is more a nostalgia for a certain listening experience: a desire not only for the music to sound like it was recorded on the analog equipment of the 1970s, but to sound like it is being played on a turntable, perhaps even to sound like it is being listened to in the 1970s. Digital lens flare is not nostalgic to this degree, because instead merely of harkening back to a cherished experience, or slavishly appealing to a previous means of representation, it carries forward the accumulation of technical enhancements to our perception of reality, that orchid in the land of technology, and hence advances a sense of realism permeated by those means. The remarkable paradox is that the very fakeness of digital lens flare affords it the power to enhance the authentic realism of digital production, since the very reality to be depicted is always already thoroughly mediated, in part via the camera lens and its associated realism.

Tradition and Technological Revolution

Recall that Benjamin held mechanical reproduction to undermine tradition by dislodging the original work from its authentic history. Whether or not this claim is compelling, it does not imply an end to all artistic traditions. Benjamin is concerned for the tradition of the original work photographically reproduced; but the arts of photography and film, irrespective of their effects on originals, or on the notion of “the original,” have engendered a coherent tradition in their own right. In that tradition, lens flare came to have a specific aesthetic use some decades ago, and the digital production of lens flare today reflects an allegiance to that tradition. Today’s image makers who use digital lens flare want their works to fulfill the camera realism of the pre-digital photographic and film tradition. They make images that bear false marks of pretend lens apertures in order, I have argued, to render their images more authentic and more realistic. It is a desire for authenticity and realism that motivates digital image producers to foreground lens-photographic artifice in their work. Their sense of the authentic and of the realistic, their very sense of the real perceived, derives from the photographic tradition that they inherit. This suggests to me that a thoroughly mediated sense of reality, toward which Benjamin was headed,

warrants a re-conception of “aura,” rather than adhering to a vaguely nostalgic sense of it waning away with the loss of a mythical immediate presence of the original or the real. Bolter and Grusin suggest, provocatively, that “remediation does not destroy the aura of a work of art; instead it always refashions that aura in another media form” (Bolter & Grusin 1999: 75). Perhaps each historical moment of further technical elaboration of the real invents its complementary intensity of “auratic” presence. The lasting tradition would be, then, not the authentic history of the genuine original object, but the history of the cumulative means by which we render aura itself a surviving presence, but as another orchid of our technological production of the real.

The traditions of different artistic genres cross-fertilize each other, of course, such that the processes of photographic reproduction have invited innovation in various art forms. The Photorealist school is one example of ways in which painters have carried on in response to the camera, and have continued to elaborate their own painterly tradition. The paintings of Richard Estes give the lie to the immediacy of the photographic image by remediating photographs in oil on canvas. Photography may have thrown into question the claim to immediate realism of the nineteenth century landscape genre, but that has simply invited revised painting strategies and resultant remediations of realism. Perhaps the use of digital lens flare today will inspire a new period in the Photorealist tradition. Many of Estes’ works – in which a painting may be based directly on a photograph that has been blown up and projected onto the canvas to guide the application of paint – are elaborately concerned with depicting the reflective properties of objects caught behind storefront glass, or with urban scenes captured in passing reflections on cars and buses. Indeed, his paintings seem to have thoroughly rendered the photographic documentation of reflected light off of everything – everything, that is, except the lens aperture of the camera itself. Lens flare is a reflection of light that I, at least, have yet to see depicted in a Photorealist painting. Perhaps painters influenced by the ubiquity of digital lens flare will produce paintings based on lens-flared photographs, with lens flare hand-painted onto the canvas with a degree of realism to rival the image editing software. If painters don’t do this, they’ll do something else, in their ongoing elaboration of a tradition in dialogue with competing means of representation, photography and otherwise. Contra Benjamin, tradition-formation as such is not at risk from

photographic reproduction. Only the hegemony of any particular tradition is threatened by revolutionary artistic technologies.

The use of lens flare in the age of digital production reflects a measure of nostalgia as well as a clear understanding of the cumulative technological enhancement of the real. It carries on the camera realism of the photographic tradition, and so to a degree it betrays a nostalgia for that tradition. At worst, it might betray a slavish adherence to a realism specific to earlier technologies of image-making, were it to remain stalled in the perception of reality it has inherited. The ubiquity of digital lens flare today suggests that the medium of digital film production remains in its infancy, dependent upon its lens-based parent for a standard of fidelity. Just as early photography followed painterly conventions of portraiture and picturesque landscape in order to legitimate itself as artful, digital image-makers mimic camera realism today in order to legitimate their images, that is, in order to render them convincing and convincingly. If my argument is correct, the digital mimicry of camera realism is inevitable not merely as a form of nostalgia but as a consequence of the desire for realism when depicting a reality suffused with our technologies of mediating it. As Bolter and Grusin observe, it would be a mistake to appeal

to a comfortable, modernist rhetoric, in which digital media cannot be significant until they make a radical break with the past. However, like their precursors, digital media can never reach this state of transcendence, but will instead function in a constant dialectic with earlier media, precisely as each earlier medium functioned when it was introduced (Bolter & Grusin 1999: 49-50).

Digital lens flare reflects this dialectic in images that are beholden to earlier media but are also invested in producing the immediacy of a real that is itself inextricable from those media. Yet even so, photography – and cinematography especially – are revolutionary technologies that, despite their initial appeal to prior conventions of realism, grew up to depict and elaborate the real in ways unimagined or impossible on canvas. These technologies transformed, if Benjamin is correct, not only representational fidelity to the real but our sense of reality as such.

It seems likely that if digital film making is to become a revolutionary art form in its own right, as it has not yet, Spielberg and its other practitioners will need to transcend the nostalgic

need to follow camera realism. Put otherwise, they will need to plant new orchids of reality in the land of technology, such that the real takes on digital aspects in excess of the realism of the camera lens. Their success will be measured by the extent to which one day the purely digital film strikes us as far more realistic than anything shot through a lens. If we may construe the wholly digital film as effectively an animated film, then the triumph of digital production as a medium for presenting the real would lie in animation becoming as real for us as the rest of reality. Such a triumph will only occur if digital enhancement becomes a second nature dimension of the real for us, because only then would a purely digital realism be truly convincing as a mediation of the real. One might ask whether, if such a day comes, the ghosts of lens flare will still haunt the digital image. I suspect that they will for as long as we continue to depict reality via the camera lens, and so for as long as camera realism remains a component of our sense of the real. Assuming other technologies succeed the digital production of images, we may one day hearken wistfully after a comforting digital reality that some new technology threatens to unseat.

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