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Psychology of the photographic, cinematic, televisual, and digital image

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Drawing on André Bazin’s notion of the ‘psychology of the image’, this paper attempts to distinguish among a horizon of various ‘photographic’ images and imaging processes in terms of the different illusions of presence those images embody as well as the senses of temporality they convey. It explores the relative indexicality of these images while also questioning the criterion of indexicality as a measure for the comparison of images in the digital era. Rather than thinking about indexicality, the paper argues that contemporary scholarship on the nature of the image should focus on the spectator’s experience of the image.

Keywords: psychology of the image; photographic image; televisual image; digital image; diegetic realism; indexicality; experience of the image

This paper seeks to distinguish among different categories of so-called ‘photographic’ moving images, including motion pictures, television, and digital images. Its goal is to understand more about how those different categories of images signify ‘moving images’ and to situate them on a horizon of other image-making practices that help define them.

The photographic image

In ‘Ontology of the Photographic Image’, André Bazin (2009) uses the term ‘psychology of the image’ (7) to describe the role that spectators play in investing the (still) photographic image with certain values – in this case with an impression of reality. In looking at a still photographic image, the viewer perceives it as different from other kinds of images – from painting or sculpture, for example. The spectator’s knowledge of how these various images are produced plays a role in their ‘psychology’, that is, the way in which they are understood by the spectator. Because the photographic image is produced ‘objectively’ – that is, by a machine (part of which includes an ‘objectif’ or lens in a camera [Bazin 2009, 7]) and because the presence of human subjectivity is supposedly minimal – viewers confer on that image a credibility that they do not

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grant to other forms of representation in which the human hand intervenes more dramatically than it does in photography. Crucial to Bazin’s argument is the notion of a phenomenological field within which differences are perceived and identities are constructed by a spectator situated within that field.

Of course, the photographic image is clearly not without subjectivity. Human subjectivity informs the grinding of the lenses to produce a certain sense of space and the framing of the image (including angle and distance); it also intervenes in the photochemical development of the image – not to mention the role played by elements of its display, such as captions or other contextualizing practices, factors which inform its consumption. However, this subjectivity pales in comparison to that of the painter whose participation in the creation of the image is far greater.

For Bazin, the ontological nature of the photographic image is not inherently there in the image itself but it is something that the viewer invests in the image. Paradoxically, the relative absence of human subjectivity in the creation of the photographic image solicits the active participation of human subjectivity in the completion of its credibility as an impression of reality. Human subjectivity stands at the center of Bazin’s essay which is about the role of the spectator in generating an impression of reality based on his or her knowledge of the relation of the photographic image, within the larger history of representation, to earlier forms of image-making (and to the object, event, or scene of which it is an image).

The cinematic image

The psychology of the photographic image necessarily gives way to the psychology of the moving image, to what Bazin (2009) calls ‘the completion in time of photography’s objectivity’ (8). ‘For the first time,’ Bazin (2009) notes, ‘the image of things is also the image of their duration, like a mummification of change’ (9). In connecting the moving image to mummification, Bazin returns to his argument about the function of image-making as a means of ‘vanquishing time’ and of ‘surmounting death’. However, the term also deliberates between two temporalities that define the moving image – its pastness and presentness. The ‘mummification of change’ embalms time in an eternal pastness made available to the present.

Bazin’s primary focus in the ‘Ontology’ essay is on the still photographic image and its relationship to a referent or profilmic event. However, the psychology of the moving photographic image is, for Bazin, the product of another axis of relationships – that of one image to the next and of one shot to the next. This is surely the meaning of the essay’s last, somewhat enigmatic sentence: ‘Then again, film is a language’ (Bazin 2009, 10). Film is both an ontology and a language and the meaning of any individual image is a product of the interaction between its relation to a referent and its relation to the images that precede and follow it. In fact, the ‘Ontology’ essay lays out the three sets of relationships that
define the nature of the cinematic image – the relationship between the image and its referent (the ontology of the image), between one image and another (the field of semiotics), and between the image and the spectator (the psychology of the image).

Bazin returns to the notion of film as a language in his 1953 essay ‘The Evolution of the Language of the Cinema’, but the historical/evolutionary nature of that essay leads him in a direction that never takes up the psychology of the image in its linguistic capacity. Christian Metz (1974a, 124–133), in his semiotic phase, sought to categorize this axis of our experience of the image, resulting in la grande syntagmatique in which he lays out, in an elaborate diagram, potential spatial and temporal relationships of shots to one another. Possibly inspired by Bazin’s discussions of cinema as a language, Metz sought to elaborate the notion of cinema as a language system, identifying the various codes that form the basis of the cinema as a language and that distinguish the cinema from other language systems (such as radio and photography). Metz (1974b) identifies these codes in terms of five formal categories that constitute the cinema: ‘speech, music, sound effects, written credits, and moving pictures’ (239). However, no one, to date, has been able to complete the project begun by Bazin in the ‘Ontology’ essay of charting all of the axes that constitute our experience of the image.

One might begin this project by acknowledging the existence in motion pictures of a diegetic realism – that is, of the relative credibility of different story worlds. Animation, often cited as a blind spot in Bazin’s notion of the cinema because its images are drawn rather than photographed, is capable of achieving a convincing diegetic credibility not only for children but for adults as well. Fantastic subject matter, ranging from horror to science fiction films, can compel our belief in the impossible worlds in which they are set. Bazin understood the phenomenon of diegetic realism (even though the word ‘diegetic’ was not a part of his vocabulary) and attempted to explain aspects of it in his discussion of The Red Balloon (1956) and other films of fantasy in his essay ‘The Virtues and Limitations of Montage’. For Bazin, the spectator invests credibility in the image via two axes of knowledge – what the spectator knows about photographic images and what the spectator knows about cinematic language. In the predigital fairy tale of The Red Balloon, photographic realism guarantees ‘the existence of a balloon that can follow its master like a little dog’ (Bazin 1967, 45). The balloon is not a special visual effect; it is really there and doing what we see it do. However, the credibility of the balloon does not rest solely on its photographic presence within the world of the film; it depends on something else; it depends upon what the spectator knows about film language. Bazin (1967) enigmatically explains that ‘this story owes everything to the cinema precisely because, essentially, it owes it nothing’ (46). The film endows the balloon with a fantastic credibility because it refuses to rely on editing to convey the illusion of the balloon’s remarkable activities. If the film relied on editing in its depiction of the balloon, the believability of the balloon’s actions would immediately be suspect by a spectator who very well knows how editing can be used to create such an
illusion. It is the absence of editing – it owes nothing to editing – which assures us of the credibility of what we see on screen. In other words, the illusion of diegetic realism is not just the product of an ontology but of the operations (or, in the case of *Red Balloon*, the lack of operations) of cinematic language.

In the ‘Ontology’ essay, Bazin too easily elides the different psychologies of still and moving photographic images. We know from Roland Barthes that the photographic image signifies pastness – a ‘having-been-there’. Its reality consists of conveying a presence – that of the camera – which was there – that is, which was once in the presence of the object in the photograph (Barthes 1977, 44–45). Drawing on Barthes, Metz (1974a, 7), in his early, phenomenological phase, argues that the cinema, which recreates in the present a past movement, achieves an impression of reality through the reproduction of that movement. This reproduction enjoys even more presence and immediacy than that of the still photograph. For Metz, the cinema’s illusion of movement undermines the actual pastness of its images to give it a ‘present tense’. As Metz (1974a) notes, ‘the movie spectator is absorbed, not by a “has been there”, but by a sense of “There it is”’ (5–6 and 8). However, the ‘it’ that ‘is’ is a presence of the past. If a photograph signifies ‘has-been-there’, the motion picture brings that ‘has-been-there’ to life in a kind of present that overcomes its pastness but does not obliterate what Mary Ann Doane (2002, 104) calls its ‘historicity’, its connection to the past.

The cinema’s presence of a past present, however, needs to be qualified. It is not absolute but relative. Technological changes in image acquisition and display, such as widescreen, 3D, and color, could be said to add to the image’s illusion of presence (i.e. the spectator’s illusion of immersion in a filmic presentness). (Even non-imaging technologies, such as sound, can increase an image’s illusion of presence by further ‘realizing’ a silent image through the addition of diegetic sound.) Studies of widescreen processes, for example, attempt to distinguish among the different effects on spectators of different film gauges. IMAX and 70 mm film, for example, enjoy more ‘presence’ and a greater illusion of participation than does 35 mm film, while 16 mm, 8 mm, and Super-8 enjoy less.3 IMAX, for example, touts itself as ‘the world’s most immersive movie experience’.4 Cinerama creates a powerful impression of immersion; its initial advertisements boasted that ‘you won’t be gazing at a movie screen – you’ll find yourself swept right into the picture, surrounded with sight and sound’ (cited in Belton 1992, 98). 3D achieves its effects through the illusion of emergence. Ads for *Bwana Devil*, the film that launched the 1953 cycle of 3D films, told audiences that ‘YOU – not the camera – but you are there as this exciting adventure drama unfolds – and its passionate love story stirs your every emotion’ (cited in Paul 1993, 326). Though immersion and emergence are vastly different sensations, both put audiences in the presence of the image to a degree not possible with standard (i.e. ‘flat’) 35 mm projection.

Our experience of any photographic moving image depends upon our awareness of all of these other possible experiences. The reduction of the contemporary ‘motion picture’ experience to digital cinema – with an IMAX
screening thrown in on increasingly rare occasions – has surely reduced the phenomenological field of different movie-going experiences significantly (essentially limiting it to digital, digital 3D, and high frame rate digital). However, this reduction in the domain of theatrical exhibition has been accompanied by a proliferation of other, smaller screen, non-theatrical exhibition platforms.

The televisual image
The advent of the televisual image necessarily transforms the psychology of the (moving) photographic image, introducing an electronic version of moving images that complicates the horizon of image forms that gives specific meaning to one kind of image or the other. Unlike the moving photographic image, the televisual image is ‘live’. It signifies presentness – ‘being there’. In his essays on ‘Theater and Cinema’, Bazin (1967, 97) discussed live television in terms of its illusion of ‘pseudopresence’, situating it between the different senses of presence created by theater and the cinema. As Bazin explains it, television resembles the theater because the actor is there in the present moment; it resembles the cinema in that the spectator inhabits a space separate from that of the actor.

The televisual image, in comparison with the motion picture image, always signifies the present. Raymond Williams (1975) alluded to its endless presence in his notion of ‘flow’ (77 and 97). Stephen Heath and Gillian Skirrow discuss television in terms of its ‘absolute presence’, a term subsequently invoked by Jane Feuer, Beverle Houston, Sean Cubitt, and others (see Feuer 1983, 14; Houston 1984; Cubitt 1991, 29; 2004, 164). Mary Ann Doane (2001, 269) refers to the ‘insistent presentness’ of the televisual image. The televisual image exists in the moment of transmission which is also the moment of consumption. Certain forms of ‘non-live’ television, ranging from films shown on television to videotaped programming, qualify but do not necessarily destroy the nature of the televisual image’s presentness.

The early years of live television give ample evidence of this presentness, but this temporal aspect of the televisual image survives in the contemporary landscape of television broadcasting and cable. Events unfold instant by instant. See, for example, the live coverage of the events of September 11, 2001 or the Boston Marathon bombings in April 2013. This sense of an unfolding of events in the present is not only found in live television, including soap operas, news, and sports programs, but it also informs all content on television which is only available at certain fixed times in the viewer’s daily schedule and that can only be received at those scheduled broadcast times. Time-shifting, webcasts, streaming, and video on demand would seem to have subverted the present tense of broadcast and cable TV by permitting consumers to control the time of the broadcast, but these types of reproduction exist more as forms of ‘delayed presentness’ than as the ‘present pastness’ of the motion picture.

Like the moving photographic image, the televisual image encompasses a variety of looks, ranging from ‘live’ to pre-recorded – and within the category of
pre-recorded, ranging from shot-on-35 mm film to shot-on-videotape or HD digital. The basic ‘live’ video look is that of television soap operas – the image is overly sharp, has a considerable depth of field, a narrow contrast range, and a color space with mid to low color saturation.\(^7\)

The one form of the televisual image that would seem to be identical to that of the motion picture is that of motion pictures broadcast or played back via videotape, DVD, or Blu-ray on television. One might argue that a film is a film, no matter how it is exhibited. \textit{Casablanca} (1943) on television remains the same film, shot-for-shot, as \textit{Casablanca} seen in a motion picture theater. One might object, as the Directors Guild and other groups have done, that colorization, lexiconning, and editing to fit the film into a time slot represent ‘material alterations’ of the original that necessarily distinguish it from the original (Edgerton 2000).\(^8\) However, even if a film is shown without so-called ‘material alterations’, it is a different object on television than it is in the movie theater. Our experience of it is different in a variety of ways. It has been broken down into electronic signals delivered to the screen in the form of a series of scan lines; it has a different aspect and contrast ratio;\(^9\) it has a different color space and color temperature; and its color is additive, not subtractive. Moreover, it is smaller in size; it is experienced in the home (i.e. it is displayed on a piece of household furniture located in the midst of other domestic activity); it is interrupted for commercials and surrounded by other forms of programming. In his discussion of ‘Cinema and Television’, Metz points to four types of differences that distinguish the two media. There are ‘technological differences’, ‘socio-political–economic differences in decision making processes of production’, ‘socio-psychological and affective perceptual differences in the concrete conditions of reception’, and ‘differences in the programming of the vehicle, and principally in the “genres” that are favored’ (Metz 1974b, 235–236). However, these differences are, for Metz, less significant than the overall similarity of the two media in terms of the various codes that constitute them as a language. For the most part, they both share similar sets of specific codes (the five categories of material expression mentioned earlier) (Metz 1974b, 238). In other words, in terms of \textit{language}, cinema and television are more or less identical. As a text, \textit{Casablanca} on film and \textit{Casablanca} on television are virtually identical. However, in terms of the differences Metz enumerates between the two media above, the two \textit{Casablanca}s remain distinct. \textit{Casablanca} on television is a version of the original \textit{Casablanca}. As Walter Benjamin (2008, 22) might say, this work, in the era of its televisual reproducibility, lacks the ‘aura’ of the original. For surely Benjamin would have revised his ‘work of art’ essay to take into account the development of new forms of technological reproduction (like a television broadcast) which retrospectively endow that which they reproduce (a motion picture) with an illusion of originality or aura.

However, there is more to it than that. The medium of transmission subtly alters the original object. Consider Metz’s technological differences: electronic scanning dices up the original image – which is whole – into a series of scan
lines which are presented in half-fields on our TV sets. The film’s 24 frames per second are transformed into television’s 30 frames per second. White light projected through a strip of celluloid onto a screen becomes a beam of electrons exciting an array of phosphors on the inside surface of the television screen that glow accordingly. Casablanca may superficially look the same, but, phenomenologically speaking, it is a different object on television.

Crucial to this new psychology of the televisual image is its different means of display/reception (Metz’s socio-psychological and affective-perceptual differences). Motion picture images exist as discrete frames that present whole images. Televisual images consist of ever-changing scan lines; the televisual image is always in the process of becoming – always incomplete, never whole. The association of the televisual image with the ‘live’ – with immediacy and presentness – is partly due to the fact that it is always in the process of coming into being. The advent of the televisual image thus prompts a re-thinking of the psychology of the photographic image, reinforcing the latter’s status as a past presence to be distinguished from the former’s present presence.

The digital image

The advent of digital imaging introduces yet again a new context in which the psychology of the moving image is constructed by the spectator. If digital HDTV extends many of the features of analogue TV discussed above, it also makes possible, as Anne Friedberg (2000, 439–440 and 450) has suggested, a host of new display formats and consumer uses that must be factored into our understanding of the psychology of this most recent form of image production and reproduction. In the era of both television and new media, the photographic moving image (as well as the digital moving image) submits itself to new patterns and sites of consumption, ranging from 65” HDTV screens to portable devices such as laptops, iPads, tablets, and smartphones.

In ‘Early Cinema, Late Cinema: Transformations of the Public Sphere’, Miriam Hansen (1995) argues that new technologies of media consumption, ranging from television to video, cable, and satellite technologies ‘have displaced the cinema as the only and primary site of film consumption’ (135) by the delivery of content to domestic (rather than theatrical) spaces.10 For Friedberg (2000, 441–443), ‘the end of cinema’ can be traced to the same or similar new technologies – to television, the VCR, the remote control, and cable television. For Hansen (1995), this erosion in our notion of what the cinema was mirrored a larger transformation from an old mass culture (1920–60), a monolithic entity that operated on a standardized, assembly-line model (i.e. mass production for mass consumption), to a new system of postmodern and globalized cultures characterized by an ‘increased privatization of the modes and venues of consumption’ (136) and based on diversification and heterogeneous appeals.

Clearly, our experience of digital images on tablets and smartphones differs from that of our experience of moving photographic and televisual
images. The display of these images involves a greater variation in screen size. On a big screen, a film fills our field of vision and becomes a world for us to enter, a world that is bigger than life. On a small screen, as Nicholas Rombes (2009, 66) points out, the film is ‘just a piece, a fragment’ of the larger world that surrounds us. Perhaps more importantly, these devices permit a mobility in the consumption of moving images that was previously impossible, given the fixed nature of movie and television screens. As Rombes (2009, 65) observes, ‘the mobility of the screen erodes the boundary between the place of dreams and everyday life’.

In the new landscape of digital imaging, the ‘look’ of the image would seem to be more or less the same. That is, until the advent of High Frame Rate, 48 frames-per-second filmmaking, introduced with the 3D, digital high frame rate version of Peter Jackson’s The Hobbit (2012). Critics characterized the look of the film as resembling that of video games or HDTV. Richard Corliss of Time magazine described the film as like ‘watching a video game: pellucid pictures of indistinct creatures’. Scott Foundas of the Village Voice described the images as ‘exceptionally sharp’ and ‘plasticine’, resembling those of high definition television. For me, the look of The Hobbit can best be described as that of a soap opera on steroids.

Indexicality
At the same time, the psychology of digital imaging is complicated by the difficulty of describing the exact nature of the relationship between digital images and their referents. The most problematic term in this equation is the word ‘indexical’. As Mary Ann Doane (2002, 22, 96–98, and 103) has suggested, Peircean notions of indexicality remain embedded in nineteenth-century epistemology, an epistemology fascinated with the capture, commodification, preservation, and archiving of time and space. Given the nature of other non-industrial, image-making technologies from the post-Civil War era, such as the iconic/symbolic sign system of painting, indexicality served as a useful concept for understanding the photographic (and subsequently cinematic) image as unique and different. The existential nature of its bond with its object functioned as a useful starting point for the theorization of the photographic image within classical film theory (as seen in Peter Wollen’s [1972, 120–126] use of Charles Sanders Peirce’s notion of indexicality to discuss Bazin).

In the era of new media and digital imaging technologies, film theory has attempted to re-think notions of indexicality. For Thomas Binkley and David Rodowick, digital imaging breaks that existential bond because it translates the appearance of its referents into numbers (Binkley 1988/89, 10–11; Rodowick 2007, 116); for Philip Rosen (2001, 308), ‘the digital is intertwined with the indexical’, making hard and fast distinctions between the two impossible; for Tom Gunning (2004, 40), digital imaging is indexical, resembling the operations of Peirce’s thermometer which indexes the temperature in numbers; and, for Mark Wolf (2000, 261), indexicality ‘can be present to different degrees and in different
kinds of linkages to the referent’. Indexicality, for Wolf, becomes indexicalities. Each indexicality is indexical in varying degrees and, more importantly, is indexical in different kinds of ways to its referents. The analogue photograph emerges as the ‘most’ indexical, more or less directly referencing a profilmic event. The digital photograph is ‘less’ indexical – on a sliding scale of indexicality – depending on the number of pixels, that is, the resolution inherent in the image. Its relation to its referent is mediated by algorithms, quantization, and/or fractal compression. Computer-generated imagery (CGI) – including simulations – are the least indexical; there is no real world referent or profilmic event to which they refer. Instead, they reference data sets. In effect, Wolf’s discussion of indexicality shifts the focus of discourses about indexicality from whether or not an image is indexical to what it is indexical of. If we can accept that indexicality is a relative rather than an absolute term, its usefulness in discussions of the psychology of the digital image becomes severely circumscribed.

As Tom Gunning (2004, 45–46) has suggested, semiotics may not be the best ‘language’ to use in describing our experience of photochemical or digital images. Semiotics seeks to rationalize the field of signs, to create systems that enable us to distinguish among them and to understand how they generate meaning. Bazin, on the other hand, never used the words ‘index’ or ‘indexicality’. His understanding of the image was phenomenological. The photographic image conveyed essences. It provided a new state of being for its ‘model’. The word he used was ‘ontological’. That word spoke to an irrational aspect of the photographic image, to those features of the image that summon up the essence of its referent, that put us in its ‘presence’. For Bazin, spirit photography would surely provide no obstacle to his understanding of the ontology of the photographic image. Those hazy spirit figures were surely once there (albeit on a separate negative) and now leave their mark as clearly as do their relatives who are reunited with them in this utopian space. ‘Indexicality’ is not a term that does justice to this particular kind of image.

One of Philip Rosen’s (2001, 309) most important contributions to the discussion of digital imaging is his introduction of the term ‘digital mimicry’. ‘Digital mimicry’ is a term that refers to ‘the capacity of the digital to imitate ... preexisting compositional forms of imagery’ (Rosen 2001, 309), such as photography. Digital imaging attempts to simulate the visual and spatial codes of analogue photography, starting with algorithms that simulate Renaissance perspective.

In ‘The Paradoxes of Digital Photography’, Lev Manovich (1996, 57) redefines the so-called ‘Digital Revolution’ as less revolutionary than ‘paradoxical’. By ‘paradoxical’, Manovich (1996) means that digital imaging is both a ‘radical break with older modes of visual representation while at the same time reinforcing those modes’ (57). For Manovich, if digital imaging technology differs in certain crucial respects from photochemical imaging technology, that difference is more or less effaced by digital technology’s ultimate goal, which involves the simulation of photochemical photography.
In a discussion of 3D computer graphics, Manovich (1996) argues that, ‘what is faked [by digital imaging] is not reality but photographic reality’ (63). Because the ‘images produced with 3-D computer graphics ... appear unnaturally clean, sharp and geometric looking’, algorithms are written to soften ‘the straight edges of computer-generated objects’, to limit the image’s depth of field, to introduce the appearance of grain, and to simulate ‘the artifacts of the lens such as motion blur ...’ (Manovich 1996, 63; see also Manovich 2001, 202).

In its simulation of analogue imaging, digital imaging actually engages in a form of iconicity that confounds any simple understanding of indexicality because it is indexicality itself that digital imaging mimics. In the realm of CGI, digital artists carefully construct an apparent profilmic scene out of bits and bytes. The non-existent referent acquires an existence due to the iconic abilities of digital artists and their software. In the particular instance of CGI, indexicality exists, if at all, only as an effect of the digitally produced image. It is only indexical in a hallucinatory sense – as a consequence of its resemblance to an imagined referent.

In that indexicality is the result of physical contact between a referent and a sign that establishes a chain that moves in one direction (from referent to sign), the completion of this chain takes place with a ‘certification’ of indexicality by someone for whom the sign is indexical. At this point in the chain, the direction of movement goes from viewer to sign and then on to referent. The crucial link in this chain is clearly the viewer for whom something is or is not indexical. As with Bazin’s notion of the psychology of the image, it is the viewer who invests the sign with indexicality – whether that indexicality is real or simulated, that is, whether it is there or not. From this subjective perspective, if a digital image looks indexical, it is indexical. Indexicality, in other words, is ultimately a matter of for whom a sign is indexical.

Contemporary imaging exists within a horizon of various imaging practices that fuse and confound traditional Peircean trichotomies. We are surrounded by various kinds of ‘photographic’ images, including electronic and digital images that seek to simulate traditional photographic imaging through the adoption of many of its representational features. In terms of the nature of the image, nineteenth-century terms such as ‘indexical’ now appear inadequate in their ability to describe the status of contemporary ‘photographic’ images. A term such as ‘simulation’ emerges as a much more productive concept for theorizing contemporary photographic-like and cinematic-like imaging practices. As Rosen and Manovich have suggested, digital images are essentially simulations of analogue photographic images. As such, digital images are almost impossible to distinguish from analogue images. If the look of the digital image can be disguised in the outward appearance of the analogue image, can the spectator’s experience of each kind of image provide a means of distinguishing between them?

It is in this phenomenological concern for the experience of the spectator that Bazin’s notion of the ‘ontological’ nature of the photographic image might be of
use to us. For Bazin, the photographic image puts us in the presence of its referent in such a way that the essence of that referent can be experienced. If digital cinema’s charge-coupled device scans and samples what is set before it, can it still share in the ‘being’ of the model?

Clearly, the technologies that inform analogue and digital imaging determine, in part, our experience of these images. On the one hand, there is film which consists of silver halide crystals that are randomly distributed throughout the emulsion on three separate layers. With each new frame, film offers a different dispersion of silver halide crystals, creating a quasi-subliminal fluctuation of the grain structure that ‘animates’ the image. Digital imaging involves breaking the image down into a fixed horizontal and vertical array of 2000–4000 pixels per line. An image stored in silver grain ‘speaks’ to us through the structure of the film grain; an image stored in pixels ‘speaks’ to us through a grid structure. The images feel different because they are structured differently.

At the same time, when a film image is projected, it is projected on the screen in its entirety as a whole image for one-twenty-fourth of a second; digital projection also involves the projection of whole frames, but digital projection is additive while traditional motion picture film projection is subtractive. In other words, with digital projection, individual pixels combine with other pixels on the screen during the projection process. Each area of the frame pulses as pixels of light hit the screen.

In short, the structure of the image differs in each medium – film, video, and digital – and spectators unconsciously sense this as part of their experience of the image. It is the randomness of the grain structure in film that gives it warmth and an intricate texture – and the lack of randomness in video and digital projection that makes those imaging technologies seem cold, electronic, and ‘dead’. The digital image is too ordered and too rational – and not random enough. In our experience of it, it lacks the ‘being’ of the model.

Notes

1. I want to thank Philip Rosen for the comments he gave me on the paper when it was delivered at the SCMS conference in Chicago, 7 March 2013.
3. For a discussion of participation, see Belton 1992, 188–196.
5. One could make the claim that each of these digital formats has a different impression of ‘presence’ with high frame rate digital projection enjoying the greatest sense of presence.
6. Motorola reported on 19 March, 2013 that 29% of programming viewed worldwide each week was pre-recorded. See: http://mediacenter.motorola.com/Content/Detail.aspx?ReleaseID=15389&NewsAreaID = 2&ClientID = 1
9. Standard and widescreen television have aspect ratios of 4:3 and 16:9. Both resemble but neither is identical to motion picture aspect ratios. 4:3 is 1.33:1, while the Academy format for film is 1.37:1. 16:9 is 1.77:1, while flat widescreen is 1.85:1.

10. For Hansen, Grand Theory has become obsolete, like other artifacts of the 1970s, such as bell-bottom jeans and platform shoes.


13. I would argue, against Gunning, that what is indexical about a thermometer is the column of mercury that moves in response to its contact with heat, not the numbers on the side of the tube.

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