THE MAGIC WINDOW:
THE EMERGENT AESTHETICS OF HIGH-RESOLUTION LARGE-SCALE VIDEO DISPLAY

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Abstract   The wide spread dissemination of high-resolution flat-screen display devices will remediate the presentation of video, and therefore the aesthetics of video production. This technology will become the basis for a new video medium, which will relate to the current television in the way that television now relates to film. Many techniques and particular devices will be shared between the old and new video. At the same time, producers will discover styles and techniques better suited to new potentials (and limitations). Out of these discoveries will evolve a unique body of practice and critical theory.

1.   Reception and Production

Any new form of mediated experience carries within itself new aesthetic opportunities and imperatives. As artists and creators work within a new medium, its effective poetics are revealed through practice and experimentation. In a technologically-based art, these poetics are refined through inter-connected dialectics of art, commerce and critical discourse.

Many of the visual poetics of video are derived from those of film. However, they were never identical. There were many differences that led to the variance in production practice and visual poetics between the two media. This paper is concerned with two. One is the difference in visual quality - in particular scale and resolution. The large, rich, finely textured visuals of theatrical film (or even well-crafted 16 mm film footage) are far superior to the truly marginal quality of standard North American NTSC images. The second difference lies in the conditions of reception. Theatrical film is seen in a magic black cube, a glowing shrine to the suspension of disbelief. Television and video are typically seen in the home, where the entertainment appliance vies for our attention along with the telephone, the refrigerator, the washroom, and the daily companions and distractions of our everyday lives.

One of these differential conditions will shift dramatically, the other is harder to predict. What will change is the visual quality of the experience. Video display technology is rapidly improving. More difficult to anticipate and summarize are the environmental parameters of the home video experience, which we will return to later in this paper.

2.   The Evolution of the Video Image

The changes in the visual quality of video are relatively predictable.[1] The family of television appliances is undergoing a significant visual upgrade. The size of the picture is getting bigger and bigger. The quality of the picture is getting better and better. The size trend has been a steady growth. The quality trend has been punctuated by advances in video playback and distribution technology such as cable-casting, laser discs, satellite distribution, DVD, advanced consumer video-recording capability, and digital multicasting.[2]

The quality and the impact of the home video experience is on the verge of making a double quantum jump. The first is the gradual introduction of high-definition television standards. The second is the increasing size and the decreasing price of plasma display screens. The obtrusive box in the corner with the marginal picture is about to become an elegant (and large) frame on the wall, coupled with imagery that is closer to 35mm motion picture film than anything in our current television experience.

The commercial momentum of this change is considerable, as is evidenced by attention to newspaper advertising. Picture sizes continue to grow, and regular CRT display is being steadily augmented by "flat screen" picture tubes, projection television, and both liquid crystal and plasma flat panel video displays. The upper end receiver-monitors in all configurations include "HDTV" or "HD-compatible" as part of their marketing pitch. The wide-screen high-definition experience is being marketed heavily, with a reliance on movies, sports and lifestyle as the marketing drivers. The top of the status heap is clearly the flat panel video displays. For now, high comparative costs definitely confine this item to the early adopter end of the technology acquisition spectrum. However, there is a logic to the adoption curve for the flat panel video units. HDTV distribution will continue to grow, consumers will be ready to move up from projection and big picture tube boxes, flat panel technology development costs will be amortized over longer and larger production runs, and prices for the wall units will inevitably begin to come down.

3.   Implications for Video Content

What do these changes in video quality imply for video production? There are obvious areas for aesthetic development. The first is a return to a more film-like poetics. The starting point is the recovery of a more robust spatial representation. Television imposed severe limits on the treatment of scale and perspective. The loss of image size and resolution was a double whammy for cinematic visual sensibilities. The long shot lost much of its impact, and the close-up became privileged to the point of imperative.

The new display technologies will reverse that trend. The scope of the reverse will depend on questions of screen size and resolution, but the trend will be to make video much more film-like in its presentation characteristics, and therefore in its production aesthetics. In fact, the combination of size, resolution and viewing distance may eventually make the reception conditions of flat-screen home video display devices closer to Cinerama than to conventional movie formats. The research question will be: "If you

are standing five feet away from a six-foot wide high-definition video screen, is it Television or is it Imax?"

Even before this extreme evolution, this new video form will differ from the old video in many of its fundamental poetics. As visual field, image size, and resolution approach cinematic standards, the wide shot will be re-privileged, and the close-up far less critical. Extreme close-ups may even become disadvantageous in many situations.

This change in treatment of subject scale should have an effect on editing pace. Television's devaluation of the wide shot lent an impetus to faster cutting for visual storytelling. Classic cinematic composition in depth was a form of spatial montage. Narrative detail could be arranged within a long single shot, and successively privileged through sound, lighting and blocking of action. Television's reliance on medium and close shots necessitated the sequencing of narrative visual elements. Story tended to be supported through a succession of tighter images rather than through the visual dynamics of a single rich image. The height of this effect was exhibited in several sub-genres unique to television: the commercial, the series opening signature sequence, and the rock video. These forms faced a unique set of constraints. Not only did they have to contend with the visual limitations of standard television, they had to face the double test of working well upon first viewing, yet standing up to repeated examination. One of their defining tactics was to push the limits on temporal montage, increasing the cutting pace enormously. Their joint effect on the poetics of the moving image was far-reaching indeed. The video "short form" triumphed in its own right, and in turn affected the poetics of longer television shows and of mainstream cinema.

Mitchell Stephens[9] points out that as a result of our exposure to the "new video" short forms, our ability to take in visual information has increased tremendously. Stephens sees this quick-cutting style as a continuing imperative within the new video. However, temporal acceleration is not the only path to a rich visual information environment. One has to consider the effect of high-resolution large-scale video display on the fundamental poetics of the medium. Lev Manovich [7, pp. 114-5] is much more attuned the implications of the evolutionary nature of the screen. He recognize that monitors are getting bigger, and will eventually become wall-size. Having established this context, he points out that "spatial montage represents an alternative to traditional cinematic temporal montage". [7, p. 322] Manovich extends Eisenstein's conception of the classic temporal montage into new possibilities for a dynamic montage within a full range of audio-visual-spatial-temporal possibilities. He relies on the role that digital technology has played in empowering creators. Digital art lends itself to fragmentation into parts and recombination into new and layered dynamic constellations. This potential gives video artists powerful tools to wield on their improved electronic palettes.

Two of these tools will be the split screen and the layered transition. At the risk of a bad pun, the split screen has a checkered cinematic history. Its full capabilities have never been consistently exploited. Any one of us can name a few feature films which have used this technique: *The Thomas Crown Affair*[6], *The Boston Strangler*[3], *Woodstock*[11], Gance's *Napoléon*[5]. Few of us could name as many as twenty examples. In a similar vein, shot and scene transitions have been dominated (in order) by the hard cut, the lap dissolve, the fade, and a very small percentage of pattern wipes. More complicated transitions were possible, but the cost of optical effects in the film

world, and the lack of visual quality in the video world have limited their utilization. Even given the cultural dominance of a relatively linear and unambiguous narrative tradition, the use of these multi-formed visual devices has been low. However, the next several years will test their aesthetic capabilities. The new video display units will provide the appropriate platform, and related digital technologies will provide the conceptual models. The windowed universe of the desktop and the web will be reflected in a rebirth of the fragmented frame video environment. The morphing and collaging capabilities of software such as Photoshop, Premiere and Final Cut Pro will lead to a layered video experience that seamlessly blends varied backgrounds and subjects in a smooth temporal flow.[3]

The renaissance of the scenic wide shot, the split screen, and layered transitions are instances within a broader direction. The new screen technologies support and mandate a strong shift to the pictorial. Larger surface and higher resolution carry their own visual logic. Creators will inevitably exploit it, and viewers will come to expect it. Other pictorial directions will include an increased emphasis on lighting and composition, the hypnotic attraction of slow motion imagery, and the continued exploration of the moving camera. Long-form visual poems such as *Koyaanisqatsi*[8] or *Baraka*[4] are examples of this pictorial cinema that will help to define the aesthetic boundaries enabled through the new video formats.

4.   Conditions of Reception

These opportunities are complicated by the situation of this rich visual field in a domestic consumer device. The question still stands - is the new video display Television or is it Imax? Or is it something else? The key here is the question of foreground and background. Film is very much a foreground medium. We sit in a dark room, transfigured by the glowing image that dominates our visual world. This is an environment completely adapted to the "willing suspension of disbelief"[2], and the surrender to the immersive foreground experience. Television is a chameleon, able to assume foreground or background status depending on several variables: the quality of the video experience, the exigencies of domestic life, and the shifting user preference in the moment.

The new format will approach the presentation quality of film, but retain the figure-ground malleability of video. In combination, this describes a medium where there will be some demand for foreground programming, and some demand for background programming. We will still use the new screens to watch "movies". The latest DVD (or its High Definition technical equivalent) will remain a domestic "destination event" that dominates our attention. At the same time, we will continue to use the device for television programming such as news, series, game shows, rock videos, and even the latest "surreality TV" concoction. Our attention to these shows will vary tremendously, as it has for decades of television viewing.

There is another yet-to-be explored type of programming that the large, high quality frame on the wall will support. That is the program that is designed to run in the background, but will sustain a certain amount of close attention at any time. The common parlance for this characteristic of this new form is "video wallpaper". The

digital antecedent is the screen saver. The prime characteristic for this type of programming is that it be pleasant, visually interesting, and capable of supporting occasional close viewing. It should change, but not too fast, and the details of any particular change shouldn't be critical over a limited time frame.

5.   Ambient Video

This is ambient video - the "slow-form" reversal of forty years of intense development of the fast-paced "short-form" moving image. Some work in this genre will be directly based in the screen saver form. This will tend to purely graphic abstract designs, more naturalistic motion graphics such as water and fire, and quasi-narrative artificial life environments. It will certainly include graphic creations that are driven by music (such as the screensaver function built into Macintosh's *iTunes*).

Other work in this stream will be more cinematic. This variation will concentrate on rich compelling visuals, making full use of the screen's size and resolution. Like the purely graphic screen-saver form, the aesthetic imperative for the cinematic version is visual ambience. The size and beauty of the visuals will capture a casual glance at any moment. The resolution and detail of the image will enable the subtle details that can sustain a more concentrated gaze. The incorporation of slow change and metamorphosis will support still longer and closer examination.[4] This form will privilege the use of nature sequences (fire, water, cloud, foliage, geology), slow motion, gradual transitions, visual effects, layered and convoluted imagery, and subtly embedded secondary visual artifacts.

The nuance of this form will be the seduction of visual sensibility. The archetypal situation is a background visual during a cocktail party. People will converse, and then glance at the screen during a pause in the talk. The glance will be compelling, for a moment, or a minute, or several minutes. Then the conversation resumes, and the viewers withdraw their attention - until the next pause in their personal flow. When the viewer is again ready, the screen will be there, revealing rich and living imagery at any given moment of choice.

It is worth noting that we are echoing the reception requirements of the short form, with a significant difference. Commercials, series openers, and rock videos are designed to work on first viewing, and to work on multiple viewings after that. Ambient video shares those difficult goals. It too must work immediately, and sustain multiple viewings. However, the short forms are designed to compete for foreground attention in the contested reception environment of the home. The ambient video slow form is content to play in the background, but always ready to assume foreground attention at the choice of the reader. Its capacity for repeated viewing can't depend on temporal montage and fast pacing - these devices both require and command viewer attention. Instead, ambient video will be a more purely visual medium - relying on the subtle layering of image and flow.

6.   **Proof of Concept Production**

The next step in my research is the production of a series of video prototype "sketches" that illustrate the aesthetic directions I am predicting. The proof-of-concept video production is integral to the research. It won't cover all of the areas considered in the monograph. For example, the initial production work won't address concepts of split screen aesthetics, or the possibilities for interactivity - both of which will form part of the critical analysis. The first set of productions will instead concentrate on variations of the "slow-form" concept as outlined above.

The production approach is to start with beautiful and visually rich nature shots (clouds, streams, snow, ice, forest, granite, campfire) as background. These background visuals will be further enriched in at least three ways.

- Manipulation of frame rate and playback speed. Some visuals are particularly effective when rendered in extreme slow motion (shots of moving water, icy streams, fire). Clouds and sky are enhanced by fast motion.
- Gradual visual transitions. It is time to fully explore the poetics of layered dissolves, very slow matte transitions, chroma transitions, custom wipes - sometimes used singly, sometimes in combination. Some of the transitions would run to completion. Others would stop, and either reverse or change direction.
- The introduction of embedded visuals. These visuals would be embedded at and around the boundary of overt perception. The initial embedded images would be human faces and figures.

For a clue to what the combined imagery could look like, visualize the embedded faces of Angkor Wat, or imagine an animation of the carving of Mt. Rushmore - gradually built up, held at about the half way point, and then gradually reversed. There are a number of visual artists (both kitsch and legitimate) that explore the concept of embedded and quasi-hidden imagery. I am not drawn to all their themes and sensibilities, but I find the fundamental visual concept compelling. Taken a step further in cinema, these half-hidden embedded visuals can sketch the outline of a proto-story. These proto-stories can consist of fragmentary yet evocative excerpts from the broad sweep of human experience: youth, growing up, aging, death, relationships, love, conflict. These story sketches would form suggestive and incomplete fragments of narrative. The incompleteness of the narrative would complement the quasi-subliminal nature of the human imagery itself.

In combination, I believe these modes (manipulated playback speed, gradual transitions, embedded imagery, proto-story) will lead to a new and effective production style for ambient video. Using these and related techniques, the first production phase of the project will begin to address the two related central issues in the use of emergent large-scale ambient video display:

- the foreground/background nature of large flat-screen reception
- liminality of image and story

I have produced the initial series of prototype sketches - each based on a twelve minute sequence from the Canadian Rockies titled "Rockface".   Each version of "Rockface" has the same seven shots: wide and medium-wide panoramas of mountains,

glaciers, rivers, and sky. Within each shot (save one) part of the rock formation slowly morphs to reveal what may be a human face, then gradually morphs back to its original state. The human imagery is not obvious - when it is brought in, it hovers at the edge of recognizability. Some viewers will see a given image on first viewing, some will not. Others may notice the image, but not be sure whether it is just a rock face, or truly a face in the rock. The embedded human imagery is spare. There are never very many faces (except for the last shot, which has three faces). As the piece progresses, the clarity and the number of faces increase, but they never emerge boldly or dominate the shot.

There are three versions of the video prototype. In the first, the facial images tease just below the liminality of recognition for most people. In the second, they are slightly more obvious, and many people notice some of the faces on first viewing. The third version adds an entirely new dimension, emphasizing slow, complex, and multi-layered layered visual transitions from one shot to the next.

7.   Initial Findings

I am in the process of screening the piece in various settings, and gauging and collecting reactions to the screenings. Some findings are already emerging. The first is the need for higher resolution. The original was shot on Beta-SP, a medium quality analog format. Versions one and two were edited on an *Avid Composer*, and the third was edited on *Final Cut Pro*. For the embedded image concept to work, the resolution has to sustain the spontaneous emergence of the "faces" that we naturally project onto rich visual fields such as mountain rock walls or clouds. This phenomena supports and multiplies the effect of the human faces that are added in post-production. To fully exploit this critical phenomena the project requires original production in either high-definition video or 35 mm film. Despite this, I believe the initial production sketches do demonstrate that the concept works. Even with this imperfect approximation of the pre-requisite visual resolution, the basic scenic imagery does sustain initial viewing. The artificially embedded faces gradually come to viewers' attention and elicit repeated (but not constant) viewing.

There are other secondary findings. One is that there is a direct relationship between transition rate and recognition of embedded imagery. If the dissolve is extremely slow, the hidden faces are more difficult to recognize. If the dissolve is faster, the faces are much more obvious. Version three of "Rockface" leads to another conclusion - the need for even more time to sustain complicated visual transitions in an ambient piece. The inclusion of complicated visual transitions shifts the balance of the piece from background to foreground. As standard film, this is no problem - the layered transitions support close attention. As ambient film they may be problematic - because they command attention as well as support it. The piece would function better as an ambient work if the shots were longer and the transitions lingered within a slower paced setting.

A final finding is that the development of a liminal proto-narrative is a tricky process to calibrate. The "plot" of "Rockface" is a sketchy one. The same set of three faces - two men and a woman - appear singly in four of the first five shots. In the sixth shot, one of the men's faces glances at the woman's face in an adjacent cliff. They smile. In the seventh and final shot, the pair appear and smile again. However a second man's face

appears, and shares a gaze and a smile with the woman. The new pair fade out together, and the original man is left alone, his expression turning to stone just as he fades back into the rock. No one has deciphered this "plot" in the first version (with the faces more hidden). Some people have picked it up in the second, more obvious version, but that version pushes the individual faces significantly above the limen of obvious recognition. The research and creative question is whether one could balance four separate variables in a truly ambient work: the number of repeated viewings, the intrinsic visual interest to sustain these repeated viewings, the gradual and subtle recognition of the individual faces over a limited number of iterations, and the recognition of the proto-narrative over even more iterations.

Future work in the genre of ambience will include a second piece based on water and cloud (already shot, but not yet edited), a revisiting of the rockface motif with many more embedded faces and the visual resolution needed to sustain them, the exploration of the ambient sound spaces to complement the ambient visual environment, and the incorporation of interactivity into the installation and presentation of the works.

References

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[2]   Coleridge, "Biographia Literaria", The Clarendon Press, 1907.
[3]   R. Fleisher, *The Boston Strangler*, 20th Century Fox Film Corporation, 1968 .
[4]   R. Fricke. *Baraka*, Samuel Goldwyn Company, 1992.
[5]   A. Gance, *Napoléon*, Société générale des films, 1927.
[6]   N. Jewison, *The Thomas Crown Affair*, United Artists, 1968.
[7]   L. Manovich, "The Language of New Media", The MIT Press, 2001.
[8]   G. Reggio, *Koyaanisqatsi*, New Cinema, 1983.
[9]   M. Stephens, "the rise of the image the fall of the word",Oxford University Press, 1998, p. 154.
[10]   S.M. Stevens, "Time Traveller, Cinematic Theory, Perception, and Scientific Visualization" *Pixel, The Magazine of Visualization*, 3, pp. 34-39, March/April 1992.
[11]   M. Wadleigh, *Woodstock*, Warner Bros.,1970.

Notes

[1] This analysis currently bypasses the role of sound, which has already undergone its own quantum evolution. Home and office playback is already comparable to most theatrical cinematic sound experiences. A more detailed analysis of the role and the future of sound in the large scale video form is one the next priorities of the author.

[2] Unfortunately, with few exceptions, the current quality of these formats is bound by the overall limitations of consumer television. The engineer's lament - "NTSC stands for 'Never Twice the Same Color'" - has the ring of sad truth for those that love a reliable and crisp image. PAL and SECAM are certainly improvements on NTSC, but they will never rival cinema for visual quality or impact.

[3] Jay Bolter and Richard Grusin [1] point out that the various media ceaselessly adapt and repurpose each others components, forms and conventions. This historical tendency is accentuated and accelerated in the plastic reality of digital media.

[4] Lev Manovich is pursuing a similar set of goals in his "Soft Cinema" project. This groundbreaking work is designed to elicit a range of viewer responses that includes such modes as: glance, focus, observe, examine, and study. He includes a description of settings and architectures that complement the large screen and support the entire range of response intensities. See "Soft Cinema" at www.manovich.net/