You are enjoying yourself at a party, engrossed in discussion with a colleague you have just met. He excuses himself to visit the hors d'oeuvres, and you turn your attention to the large flat-panel television on the wall. Your eye is caught by the beauty of a sublime mountain landscape, and then you are surprised when a waterfall explodes between two of the high peaks and tumbles down to a lake at the bottom of the frame. The splash of the waterfall spreads in circles across the lake, and as it spreads, it gradually transforms the shot into a completely different scene. You gaze is caught by both the magic-realist aesthetics of transformation and by the visual impact of the images themselves (see Figure 1 below).[1] Then, your companion returns, and you return your attention to the living person and the pleasures of conversation.

This is Ambient Video - imagery intended to play on the walls in the backgrounds of our lives. In the spirit of Brian Eno's "ambient music", Ambient Video must be "as easy to ignore as it is to notice".[2] For my own Ambient Video art, I have expanded Eno's dictum to three interrelated criteria that I believe ambient video work must satisfy:

- First, an ambient video must not require your attention at any time.
- Second, it must reward your attention with visual interest whenever you do look at it.
- Finally, because ambient pieces are designed to play repeatedly in our homes, offices and public spaces, they must continue to provide visual pleasure over repeated viewings.

The ubiquitous video screens in our domestic, corporate, institutional, and public environments provide rich ground in which ambient imagery can thrive. However, the three criteria for ambient video success are difficult to meet, regardless of venue. Eno saw this problem twenty five years ago when he wrote about his own ambient video art: "These pieces represent a response to what is presently the most interesting challenge of video: how does one make something that can be

seen again and again in the way that a record can be listened to repeatedly? I feel that video makers have generally addressed this issue with very little success..."[3]

The problem remains a significant aesthetic challenge. Some creative approaches are simply inconsistent with ambient experience. Narrative both attracts and relentlessly holds our attention, so most ambient works are essentially non-narrative. Fast cutting also draws attention to itself, so ambient works should be generally slower paced. The riveting spectacle of the classic "cinema of attractions" is also inconsistent with ambience, although this is a more complicated case. The complication arises because it is possible to position ambient video as a more modulated and low-key version of the cinema of attractions. An ambient visual attraction must be subtle enough that it doesn't command attention, but also interesting enough to support attention when it is bestowed, and to sustain interest over repeated viewings.

The television itself has long been used as an ambient device - often purposely left on whether people are actively watching or not. Some video works have been explicitly designed to act as ambient visuals - the classic example being the Yule Log. The burning log has been seen in broadcasts, video tapes, DVD's and Blue Ray discs since its first appearance on WPIX New York at Christmas 1966. However, like its close cousin - the "Video Aquarium" - and a number of other variations on these simple-minded visual themes - the Yule Log is kitsch, not art.

Ambient Video as Art

Ambient video can transcend kitsch and be conceived and executed as art. To identify the roots of the ambient aesthetic in the history of experimental cinema and video art, see my article in the journal *Fibreculture*.[4] For my own work, I rely on three specific aesthetic interventions to create ambient videos that can claim to be art. The first is a reliance on strong composition, lighting and cinematography. Since ambient video is slow-paced, the form needs visual compositions that will sustain over exceedingly long screen durations. Working closely with my Director of Photography, Glen Crawford, I seek these strong visuals in nature, and in particular in the spectacular scenery of the Canadian Rockies. The raw materials of my work are the elemental components of the mountain environment: earth (rocks, peaks, ranges), air (clouds) and water (creeks, rivers, lakes, snow and ice).

The second aesthetic intervention is the treatment of cinematic time. Ambient art thrives on subjects that present motion in a fixed spot without requiring a camera move to track the subject. Water and clouds are perfect examples. However the motion provides more visual interest if the time base is altered. Typically, water is slowed down and clouds are sped up - often within the same shot. Cinematic time is therefore treated as plastic - a malleable creative parameter to be shaped and manipulated.

Cinematic space is treated as plastic in an even more intensive fashion. This third aesthetic intervention is far more complex and difficult to achieve - the aggressive use of video layers and layered transitions.   The images are first fragmented, then recombined. Shots are deconstructed into visual elements, and new elements from the incoming scene are slowly introduced on top of the existing scene, until they completely replace it - and the new shot has been created. This process continues throughout the film, as one landscape forms within and over its predecessor in

an endless chain. Each transition occurs in several stages, and each stage is carefully planned, mapped and executed with detailed attention to visual flow and the changing gestalts of the outgoing and the incoming shot. Figure 1 below is an example: the waterfall appears magically - tumbling down one of the mountain passes to the lake below. The transition then gradually reveals the entire next shot with the waterfall in its proper context - losing the lake and the original mountain range.
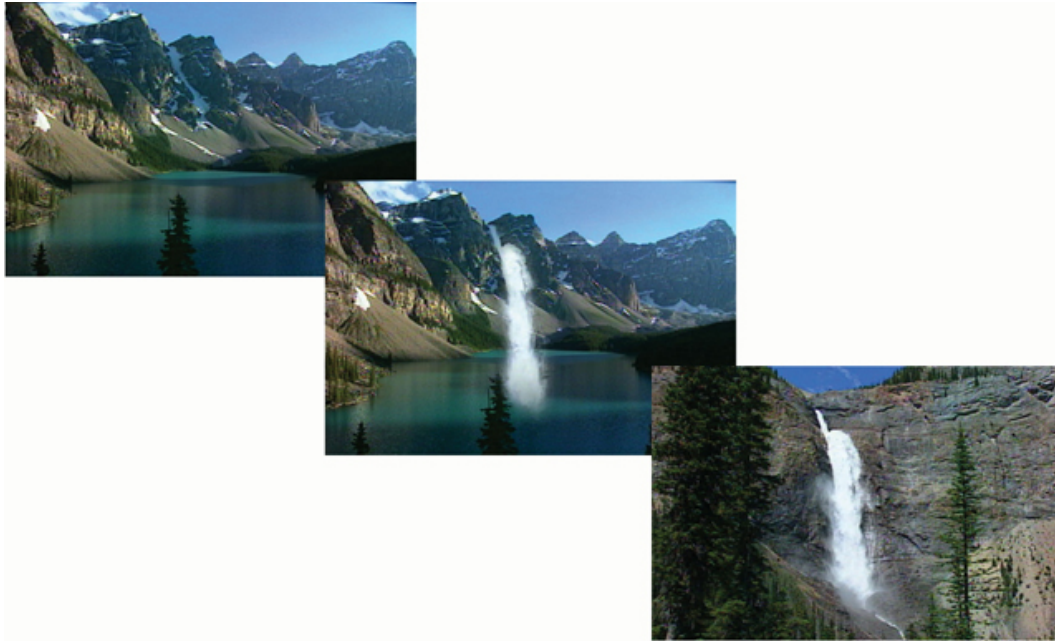

Figure 1: Scene Transition from Rockface

A Transformative Intermedia Experience

Submitted by Jim Bizzocchi on Wed, 10/12/2011 - 14:00

I have completed five ambient video works: Rockface, Streaming Video, Long Falls, Winterscape, and Cycle. Each of these is a visual poem, exploring the relationship between form, content and visual flow in the context of the landscape as environment. The visual material includes studies of water snow, ice, sky and peaks that play out across a range of scales - from the wide expanses of the full mountain landscapes to the equally rich visual pleasures of closer shots and finer detail.

Compelling as these images are on their own terms, this work is not a paean to mere visual beauty. At its heart, my work is a repudiation of the fundamental logic of film and video construction. The moving image has historically relied on the hard cut as the dominant instrument for the ordering of shots. My work rejects this limitation. I completely abandon the hard cut, along with its reductionist illusion of instant and invisible transition. My style never hides transition - rather it celebrates it.

In doing so, the work transcends the borders - both spatial and temporal - that have traditionally bound the moving image. The spatial borders within the frame are broken, as image is first deconstructed into component parts, and then rebuilt within a recombinant visual aesthetic. The temporal borders between the shots are obscured, and the traditional hard cut is abandoned for an ongoing cycle of flow, metamorphosis and transformation.

This is an evolution in the fundamental treatment of the moving image. A combination of spatial montage and visual transformation has replaced the standard cinematic conventions of temporal montage. Combined with the natural imagery, the visual flow creates its own momentum. Subject and technique mutually support a dialectic of change and connection. Landscape, detail, and form are visually deconstructed and then fused together within an organic unity of space and time.

We have seen that time itself is treated as a plastic material in this work. Just as significantly, the pace of change, though constant, is slow. Images are held on the screen long enough that detail can be examined, texture is revealed, composition can be appreciated, even as it flows and slowly transforms.

Because of the treatment of time, space, and image, the piece is as much a video painting, or a living photograph as it is a traditional moving image work. In the spirit of intermedia [5], it traverses media boundaries and merges aesthetic forms and viewer reception practices. This form of ambient video draws on a range of artistic practices: a photographer's eye for landscape, detail, composition, and light; a painter's sense of color and shape; a filmmaker's concern about time and interval; and a video artist's ability to combine moving imagery into dynamic collage and flow. These ambient works reject the standard cinematic imperative to seize viewer attention, and then to hold it unrelentingly. Instead, like a painting or a photograph, the choice of when and how long to interact with the piece is owned by the viewer. This moving image art doesn't command, it first seduces, and then rewards our attention.

Ambient Video and Sustainable Replay

I did see one potential problem for ambient video art that is conceived along the lines outlined above. An ambient piece that is intended to hang in a space of recurrent viewing (the home, an office, a public space) will necessarily be seen many times. This final creative challenge - that visual pleasure sustains over repeated viewings - is indeed a non-trivial problem, as Brian Eno recognized. For my own work, no matter how strong the imagery, and how intricate and aesthetically pleasing the transitions - after a number of viewings the images, the sequencing, and the transitions will all be remembered and anticipated. A certain amount of memory and anticipation will initially add to the viewing pleasure. However at some point the extended repetition of identical sequences may lead to a diminished aesthetic return and a lowered sense of visual pleasure.

I decided to explore the potential of computation to address this problem - and to increase the re-playability of my ambient video art. A generative ambient video piece can rely on simple computational operations to continuously vary the sequencing and combinations of both the

ambient shots and the visual transitions. Since I incorporated many of the same visuals as my last linear video (*Cycle*), I titled the new generative work *Re:Cycle*.

The *Re:Cycle* Engine - a Recombinant Generative Video Presentation System

Re:Cycle incorporates a variation on the aesthetic strategies of the earlier works (strong imagery, manipulation of time base, and careful use of video layers and layered transitions). *Re:Cycle* maintains the first two aesthetic strategies, but explores the development of a recombinant aesthetic that applies random processes to video layers, transitions, and sequences.

The commitment to a recombinant video system based on random process is an exercise in generative art. *Re:Cycle* is driven by a closed generative system, relying completely on two databases for its operation. The first is a database of ambient video shots, the second is a database of video transitions. The twenty video clips in the shots database are all visually strong, at least sixty seconds long, and shot in the same general region (the Canadian Rockies). Many present the cyclical and visually interesting motion of clouds or water. The time frame in several of these shots has been manipulated in order to give the motion even more visual interest.

There are four transitions in the transitions database. One of the four is a luminance transition. This transition will use the brightness values within the shot to drive the change from one shot to its successor. The incoming shot will appear first in the brightest sections of the current shot, then in the mid-range brightness areas, and finally in the darkest areas. When the transition is complete, the second shot has replaced the first completely. (Figure 2 below) The other three transitions work in a similar fashion, except they are based on chrominance values, not brightness. There are three chrominance transitions: red, blue and green - corresponding to the video color palette. Each of these starts the transition in the areas of the shot with the highest chroma value in the selected color, and continues the transition down through the range of chroma saturation until the transition from one shot to the next is complete.

Before Luma Transition

Luma Transition Begins

Luma Transition Continues

Luma Transition Complete

Figure 2: Stages of Luminance Transition

Figure 3 below shows how the generative system uses these two databases to structure the video presentation. When a shot is on the screen, the system selects a new shot at random and selects a new transition at random. It uses the transition to drive the change from one shot to the next, and then repeats the process indefinitely.
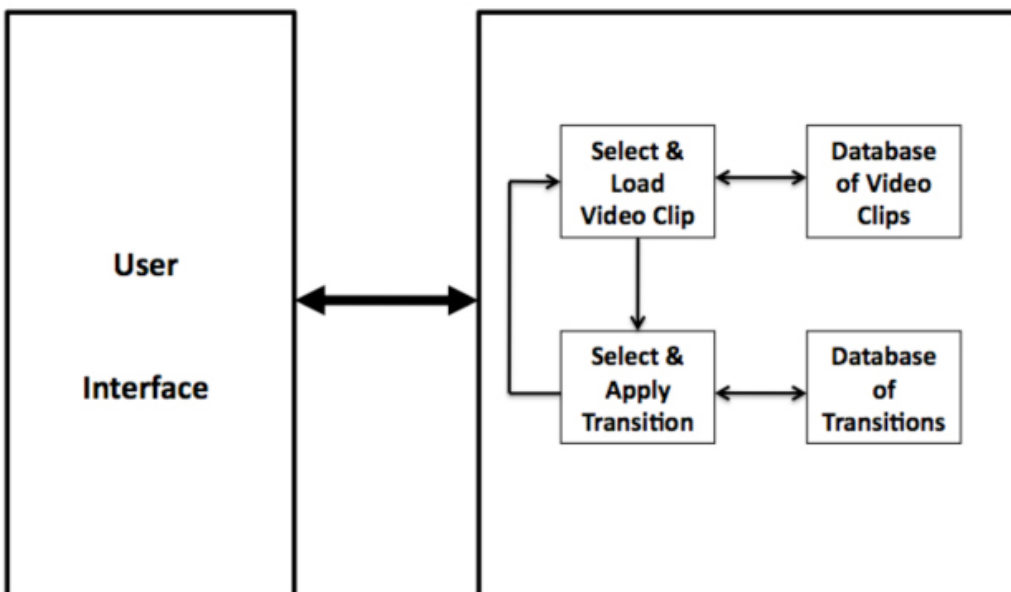
Figure 3: Generative Engine

This generative engine has the potential - especially if the database of shots is large enough - to drive an ambient video art work that can run indefinitely, and still provide interesting visuals and transitions. The resultant doubly-randomized video stream will generally not repeat particular shot sequencing with any frequency, and will generally provide a different transition for each change. The recombinant aesthetic will play out both temporally and spatially. The random sequencing will provide temporal recombination, while the interplay of random shot and random transition selection will drive each shot change with a fresh spatial recombination.

Addressing the Creative Challenge

Submitted by Jim Bizzocchi on Wed, 10/12/2011 - 14:00

The goal of *Re:Cycle* is to create an ambient work that will run indefinitely with minimal repeating of either shot sequences or specific transitional moments. The increase in playability does come with a price - a loss in aesthetic control over the details of sequencing and transition. One can see this as a tension built into the system.   A linear video maximizes aesthetic control - the video artist carefully plans and executes the sequencing and the visual transitions. The decision to utilize random sequencing and randomized transitions has added longevity, but has sacrificed a measure of creative control.   The overall design problem becomes a subtle challenge - how to find the right balance between variability/re-playability on the one hand, and aesthetic control on the other. Each significant creative decision represents an attempt to find the appropriate solution along this continuum:

re-playability <=======> aesthetic control

My previous linear ambient art was situated at the far right hand side of this dynamic. The shot sequencing and shot transition decisions were locked in, maximizing aesthetic impact at a possible cost to the long term re-playability of the works. In the linear videos the strategy is to rely on this strong aesthetic control (careful shot selection, manipulation of time base, intricate visual transitions) to support a reasonable amount of re-playability. The use of the generative database has increased re-playability through a strategy of recombinant variation, but the cost is the loss of aesthetic control over shot sequencing and shot transitions.

I did restrict my choice of transitions in order to protect aesthetic quality. There are a host of video transitional devices: the hard cut, the dissolve, innumerable shape-based wipes, and the more complex transitions such as luminance keyed transitions and chrominance keyed transitions [6]. I decided to forego most of these possible transitions, and restrict myself to luminance and chrominance keys precisely because they were more visually complex, less predictable in operation, and therefore more interesting to watch. This decision sacrificed the re-playability of an increased transition palette in order to privilege a more aesthetically pleasing subset of transitions.

My Future Work

I will continue to work in both linear and computationally generative ambient video art. For my linear work, I will do more shooting in the mountains, but also wish to explore other natural and urban settings for source material.

For my generative work, my goal is to continue the directions I've started - i.e., to increase re-playability, aesthetic impact, or both. Two of my tactics will increase re-playability. I will be collecting a larger number of strong shots for the shot database. I will also be designing variations on the four basic transition algorithms to increase the variability of visual transformations. Another tactic will increase aesthetic control at some expense to variability and re-playability. I plan to incorporate metadata in each shot in order to nuance the random operation and maximize the visual sense of flow based on shot characteristics. Finally, I have not yet addressed the question of creating an appropriate sound track for a generative ambient video system. All my linear videos do have a sound track (although as "living photographs" I intend them to work well with the sound turned off). The role of sound and audio technology in a generative ambient piece is a rich and necessary direction for future creative development.

Future Of Ambient Video

Ambient video as a creative genre and as a cultural phenomenon should become more widespread, although it is difficult to project the timeline with certainty. Ambient video has significant intrinsic value as a form of artistic expression and viewer experience. In addition, ongoing technological and cultural trends should support its growth. Technologically, large flat-panel screens will continue to proliferate, grow in size, and improve in quality (beyond current HD resolution complemented by increased dynamic range and screen refresh rates). Culturally, there is increasing awareness of the downsides of our incessant march towards fast-paced and hyper-mediated sensory overload. Ambient video is consistent with the growing commitment to calmness and wellness as healthy alternative lifestyle choices, and their growth should support the growth of the ambient video aesthetic.

Collaboration and Acknowledgements

My creative and related scholarly work has been supported by the School of Interactive Arts and Technology and Simon Fraser University, by the Social Science and Humanities Research Council of Canada, and by the Banff New Media Institute. This paper draws upon two of my earlier scholarly works. For a fuller description of ambient video and its broader context, see my article in the online journal Fibreculture [4]. For a fuller description of Re:Cycle and the generative engine see my paper from Digital Arts and Culture Conference [8].

In this current article I have labeled the creative work in the first person - and it is true I conceived, developed and continue to direct the artistic process myself. However, the execution of both the linear and the generative ambient art works relied heavily on the talent and the dedication of other colleagues. The linear ambient art is the work of a three-way collaborative team. Director of Photography Glen Crawford provided the sure eye and sense of place that resulted in the strong visuals that are the foundation of the videos. Post-production specialist

Christopher Bizzocchi designed the visual flow that is the hallmark of the finished pieces. I'm fortunate to work with these two fellow artists and benefit from their own transcendent creative skills. The generative art is supported by the scientific insights of my scholarly partners Dr. Belgacem Ben Youssef and Dr. Bernhard Riecke, and built on the coding ability of an exceptional student team: Brian Quan, Wakiko Suzuki and Majid Bagheri.

Notes

[1] Bizzocchi, Jim, *Rockface*, video, 12 min., 2004.

[2] Eno, Brian, *Music for Airports*, PVC 7908 (AMB 001) album liner notes, 1978.

[3] Eno, Brian, essay from booklet accompanying the original release of the *Thursday Afternoon* CD (1984), as quoted in *14 Video Paintings*, Brian Eno, Ryodisk Label, London UK, 2005.

[4] Bizzocchi, J. The Aesthetics of the Ambient Video Experience, *Fibreculture Journal*, 2008, Issue 11 http://www.journal.fibreculture.org/issue11/issue11_bizzocchi_print.html

[5] Higgins, D., "Intermedia", 1965 and 1981, reprinted in *Leonardo*, Vol. 34, No. 1. (2001).

[6] Bizzocchi, Jim, *Re:Cycle*, generative video installation, 2009.

[7] The terminology "wipes", "keys", and "keyed transitions" derives from the earlier language of cinema and analog video production and post-production.

[8] Bizzocchi, J., Ben Youssef, B. Quan, B., Suzuki, W., Bagheri, M., and Riecke, B., "Re:Cycle - a Generative Ambient Video Engine", DAC 09 [Space-Time of Ubiquity & Embedness] - Digital Arts and Culture 2009, Dec. 12-15, UC Irvine http://escholarship.org/uc/item/47g5w6c4;jsessionid=D5AFC4FC8C0213A7C0AD...