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Analogous: Digital / Analogue Metaphors.

Ele Carpenter, October 2011.

To draw analogies between things is to identify similarities to help communicate meaning, often relying on anecdote, metaphor and poetic license to capture the essence of an idea or thing. But there are always problems of translation. When discussing our understanding of the world, the term 'analogue' has become shorthand for anything not digital, and has become an analogy of its own. 'Digital' has also become an analogy for anything requiring a computer. This essay starts to investigate some of the analogies of analogue and digital media to reveal some of the messy complexity of thinking about art and animation.

The history of animation forms an archive of the relationship between the hand of the animator and the development of audio-visual technology. Here the animator, editor, artist, and producer utilise and shape their tools in ways which often reveal the process of making. From sand painting to early Eastern European animation, puppetry to anime, the stop-frame or storyboard of animation is altered frame-by-frame, pixel-by-pixel.

But when we spot the puppeteer's hands, or the blue pixel in the corner of the screen, are we any less entranced by the illusion? Or is this is the Brechtian method – where the audience, able to acknowledge the theatre as artifice and their own role as the spectator, can then engage with the content of the play along with, rather than despite, its artifice? Here, like any successful artwork, form and content are precariously balanced to reveal an understanding of the physical material, the spatial concerns of the medium, and the complexity of meanings at play.

Animation can be drawn in a flickbook, photographed, filmed, or digitally created using software, or even working within the space of the Internet where the network is both the site of production and distribution. But are these digital tools or spaces more or less handmade or crafted than Geppetto's puppetry workbench?

Each generation learns to use its tools and machines with the knowledge of the past and anticipation of the future. But then the future arrives and we become dated: our style and syntax identified by a technical timestamp. Yet we have to continuously learn to use the aesthetic and software codes of the present – if only to understand enough to reject them, but to do so knowingly. It's a constant catch-up with the next generation of early-adopters. But what about in-depth expertise in a particular set of tools? An artist can hone their skills to finely tune an instrument to achieve the desired effect, or push the technique to its limits, where the exploration of the medium is both the form and content of the work, in keeping with the Bauhaus mantra 'truth to materials'.

To understand the significance of digital/analogue explorations in contemporary art, it's useful to investigate the characteristics of the technological processes and the conceptual frameworks in which they operate.

During March-April 2011, I hosted a discussion of Analogue/Digital Art on the Crumb New Media Curating email list that provided a snap-shot of current thinking.[i] The topic provoked intense debate about the distinctions between discreet units and continuous data flow on a metaphorical, quantum and philosophical level which is pertinent for the conceptual context of artists' film and video currently being made within the digital data-stream. On a more material basis, people reflected on the physical experience of making and the sensory experience of engaging with the analogue and digital world. The discussion also highlighted current concerns surrounding technological sustainability. Many of these ideas are pertinent to contemporary animation that explores tensions between digital and hand making using a range of media and tools.

For argument's sake, lets start with a basic distinction between the two processes of producing and transmitting information: "Very simply 'analogue' is a continuous signal, like radio waves, or a dial which indicates the time on a clock. Small fluctuations in the signal are meaningful, but are also effected by white noise (like the static on the radio). Celluloid film is analogue because it records a continuous flow of light and images over time, whilst digital moving images are composed of on/off dots. Analogue signals are prone to interference, and copying them degrades the original. Analogue machines can be powered by electricity, hydraulic power or windup clockwork. Some say that 'analogue is the new digital'[ii] because its cool to know how things work, and to make hybrid digital-analogue contraptions. In contrast, 'digital' is the way in which information or data is transmitted in digits. Digits are binary - you can count them on your fingers: zero/one or yes/no or on/off.[iii] A punch card stores binary information through a sequence of holes. Digital information is encoded so both the sender and receiver of digital information must speak the same language. Digital signals do not to suffer from interference, making the information error-free. This means you can make lots of digital copies and creativity is easily networked and distributed, so that the idea of owning an original becomes problematic. Examples of older digital systems include: an Abacus, Morse code and Braille. A modem translates analogue information into digital."[iv]

Although it is possible to map the characteristics of certain categories of technologies, the Crumb discussion revealed how the Analogue/Digital divide can be an arbitrary distinction on several levels. As human beings we experience the world through our analogue senses, however that information is created[v]. At the same time digital information exists in a constant data-stream, in which we are immersed. Charlie Gere points out that, ironically, it is often digital art that can be 'touched' and interacted with, whilst more traditional material based art works are displayed in glass vitrines, or behind ropes, and cannot be touched. He concludes: "Thus it can be suggested the work of art in the digital age can be thought of as a chiasmus in which the analogue work of art is distinguished by its digital discretion, whereas the digital work is characterized by its apparent analogue continuity."[vi]

This analogue experience of the world is tied to the desire for a more haptic form of working with computers evident in the digital-makers who are busy reverse engineering, innovating with the technology we already have, rather than chasing the latest upgrade. In

the Crumb discussion, I wrote: "I'm interested in the physical, spatial, sculptural aspects of our work: the moments at which the relationship between digital and analogue become messy. On the one hand many people are so familiar with end-user tools, there's little understanding of the machine and its internal workings. In terms of art and curating - this discourse focuses on the nature of the image. On the other hand there seems to be a strong DIY / DIWO (Do It With Others - to quote Furtherfield[vii]) / DIT (Do It Together - to quote action weaver Travis Meinolf[viii]) movement to work collectively and make stuff. In this context 'making' includes reverse engineering, upcycling, reuse, recycling, hacking, modifying, collage, remixing etc... all creative activities across craft, design, computing, and art. And these kinds of making involve a range of tools and processes from knitting needles to coding, online and located networks. Here the discourse focuses on the nature of the process. But of course both these areas of practice are inter-related, even if we think of one as fine, art, theoretical, critical, and the other as more hobbyist, amateur, folk, populist, etc." [ix]

So here I'm trying to make a link, albeit a crude one, between analogue-digital hybridity and sustainability. Digital sustainability raises questions of longevity of digital formats, the limited resources we have to maintain and run them, and the consumption of natural resources used for building disposable computers. The built-in obsolescence of fast-upgrading formats of disposable goods is the cornerstone or default of free-market capitalism. Along with diminishing resources, crashing markets and deskilling, there's an increasing sense of being lost in an excess of digital information that is sliding out of view. At the same time, analogue formats are no longer seen as commercially viable, and their machines and print facilities are being phased out.[x]

Remarkably, in his BabelFiche project artist Dave Griffiths is transferring digital video onto microfiche. It's a kind of reverse engineering the pixel back into a sequence of frames. The project imagines a future where anthropologists wont be able to access the moving images of the 21st Century. To anticipate the problem, Babelfische is transcribing digital film into still frames, printed onto colour microfiche film which can be viewed through an enlarger which magnifies the images. Microfiche is "a photographic medium capable of lasting 500 years and simply requiring light and a lens to reveal its contents."[xi] This is Steampunk at its best, using the historical imaginary to slide between time zones – a Heath Robinson invention for a future where natural resources and electrical power may be limited, and digital formats outdated.

Sean Cubitt describes the precariousness of extracting Lithium for batteries from the Salt Lakes in South America, and highlights the potential environmental degradation of indigenous land in Bolivia that will provide another 20 years of Lithium. Here traditional life is in danger of being lost in the face of modern progress, where the geopolitics of modernity is mapped by the flow of wealth. Cubitt expands on Charlie Gere's post earlier in the crumb discussion: "As Charlie observes, analog is invented by digital, in the same way tradition is invented by modernity - indigenous tradition by colonial modernization."[xii] This process of modernity – the naming of the other as old to differentiate the new and prioritise its development, is explored by Marshall Berman who

traces the deep Faustian metaphors of progress which have sustained industrial development from the medieval to the modern world.[xiii]

Animation is traditionally an exploration of the handcrafted spaces between analogue and digital processes. But in the drive towards the digital future it is important that we don't construct a hierarchy of formats, that we value the hand-made and the coded, the analogue and the digital. This is essential if we are to move beyond the analogue as a digital special effect, and retain a deeper understanding of image making with a range of tools, spatial and aesthetic languages. Not simply as a new wave of nostalgia, nor just to conserve a century of moving images, but to enable us to use the tools of the future, understand their provenance and evolution, and re-invent them for our own use.

From the perspective of the present, Babelfiche is traditionally archiving a transient format which slows down the mode of capture, and viewing, to a more human analogue scale. In part, this is due to the accessibility of microfiche, in comparison to the complex programming languages of software, which are often proprietary and locked. The image printed on the microfiche is the image we view it's not encoded in another format. For the artists and pro-sumers of the future, creating digital animation today is heavily reliant on end-user software, rather than learning the programming and coding skills to create their own syntax, aesthetics and forms. A return to learning computer programming and woodwork skills in schools could be the first step in enabling a generation to be digitally and analogically dextrous enough to create their own metaphors.

[i] Ele Carpenter hosted the 'Analogue/Digital Art' discussion on the NEW-MEDIA-CURATING@jiscmail.ac.uk list hosted by CRUMB, University of Sunderland, UK, March-April, 2011. The list archive is available at: https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=new-media-curating An edited transcript of the main threads will be available in a pdf on the Crumb website in 2012: http://www.crumbweb.org/
[ii] Analogue is the New Digital' Curated by Simon Blackmore, Andrea Zapp. Madlab, Manchester 2010. http://www.analogueuk.co.uk http://madlab.org.uk/content/analogue-is-the-new-digital
[iii] Charlie Gere, Re: [NEW-MEDIA-CURATING] Analogue/Digital Art, 4 March, 2011, 12:51
Johannes E. Goebel, Re: [NEW-MEDIA-CURATING] Analogue/Digital Art, 4 March 2011, 13:12
[iv] Ele Carpenter, Re: [NEW-MEDIA-CURATING] Analogue/Digital Art: March Theme. 1 March 2011, 20:34
[v] "At the last mile, humans experience all media "analogically." Analog light waves enter a physical eye, analog sound waves enter a physical ear, physical skin and muscles feel analog signals (heat, resistance). Whether I'm listening to a digital CD or analog vinyl, both ultimately enter my ear analogically." Curt Cloninger. Re: [NEW-MEDIA-CURATING] Analogue/Digital Art, 6 March, 2011, 20:14
[vi] Charlie Gere, [NEW-MEDIA-CURATING] Analogue/Digital Art. 4 March, 2011. 12:51
[vii] http://www.furtherfield.org/events/furtherfields-do-it-others-diwo-networking-event-2007
[viii] http://actionweaver.com
[ix] Ele Carpenter, Re: [NEW-MEDIA-CURATING] Analogue/Digital Art: 22 March, 22:29
[x] In March 2010, Soho Film Lab ceased to print 16mm film. It was the last lab providing this facility in the UK. http://www.gopetition.com/petition/43288.html
[xi] http://www.babelfiche.net/
[xii] Sean Cubitt, Re: [NEW-MEDIA-CURATING] Analogue/Digital, 6 March 2011 22:57
[xiii] Marshall Berman 2010. 'All that is Solid Melts Into Air.' Verso: London / New York. Chapter 1, 'Goethe's Faust: The Tragedy of Development' p37-86.