

**CHRONOMETRIC MEDIA: DREAM, FILM AND
CREATIVITY IN THE DIGITAL AGE**

by

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ABSTRACT

This paper represents the written component of my MFA graduating project, and was written to accompany a multi-media projection, screened at VIVO studios on July 20th, 2009. The project, entitled *Dreamtime Jetztzeit*, explores how mass media forms and technological change alter the collective and individual experience of time and space, and how these types of spatiotemporal changes can affect the way we experience the world. Focussing on the transition from analog to digital as a unique and transitory place from which to take stock, *Dreamtime Jetztzeit* traces a series of constructed binaries - film/old versus digital/new, film/dream versus digital/awake - and combines the political history of mass media change with sociological concerns and cognitive theory. Produced from the point of view of a practicing media artist, *Dreamtime Jetztzeit* uses both old and new technologies to explore the social and political implications of media change.

Keywords: film, video, digital media, dream, creativity, reception

Subject Terms: media history, technological change, remediation, cognitive theory, digital culture

DEDICATION

To Laurine Harrison, Catherine Earl, and Elliot Wheatcroft.

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TABLE OF CONTENTS

Approval	ii
Abstract	iii
Dedication	iv
Acknowledgements	v
Table of Contents	vi
Introduction	1
Once Upon A.....	1
.... Jetztzeit	2
About the title.....	5
Chapter 1: Context - Juncture	6
Media Change: Theory	6
Media Change: Practice.....	13
Chapter 2: Film/Video Time/Space	16
Film Timescapes.....	16
Video Timescapes	19
Chapter 3: idleness Versus “Leisure” in the Digital Age	23
Idle hands are the Artist’s Playthings.....	24
Work/Leisure and Technology	29
Chapter 4: Somnolent Culture	33
Dreams/Films	34
Chapter 5: Frenetic Culture	40
Digital/Awake.....	40
Synapse Snap	43
Outroduction: Apocolypse New Later	46
Epilogue: Dreamtime Jetztzeit.....	49
Works Cited	54

INTRODUCTION

Once Upon A....

Time is social.

- Robert Hassan, *Network Time* (2007)

Time *is* social. Time is also: political, seasonal, linear, constructed, fluid, rigid, cyclical, circadian, mechanistic. Time is both subjectively experienced and malleable – the sickening slow motion of an accident in progress, the accelerated passage of years as we age - and objectively marked and controlled. The clocks, the even demarcations into fractal minutiae – seconds, nanoseconds, picoseconds. Diurnal, durée. Experiential and existential. Time is money. Time is also, à la Einstein, space.

Time is a medium: it could be argued that all of the fine arts have an interest in distorting and experimenting with time and space. It could be further argued that mimetic image-based work advances this interest even more, in that time and space can be seen as the meta-mediums of photography, film and video. However, the manner in which these meta-mediums are framed, represented, and reproduced by analog film versus digital video are vastly different. This elemental difference provides a materially grounded, spatiotemporal starting

point, from which to view our current state of technologically-induced change; given that, as we all know, the times they are a-changing.

.... Jetztzeit

Time is changing, and so is space, and this contemporary shift in the valuation, experience, and interpretation of time/space can be directly linked to the explosive growth of information and communication technologies, and the resultant effects (and affects) of these technologies on all aspects of human life, from the micro level of the individual - work, leisure, thought - to the macro level of community, family, the national and the global. In the introduction to *24/7: Time and Temporality in the Network Society*, Robert Hassan and Ronald E.

Purser write:

Schor and Virilio point to something that most of us recognize intuitively: our relationship with time has changed over the last quarter century. This, not unconnectedly, as we will see, is the period of time that has seen unprecedented spatiotemporal transformation through the growth and spread of neoliberal globalization and the revolution in information and communication technologies.¹

While time and space are currently being reconfigured via the digital media forms utilized by global capital, we are now at a transitional point of remediation, in that although the previous analog media forms are imperilled, they are, for the time being, still here. As a media artist who utilizes both analog and digital media forms, and who is interested in a politically and socially engaged art practice, I

¹ Hassan, Robert and Ronald E. Purser, ed. Introduction" in *24/7: Time and Temporality in the Network Society*. Stanford: Stanford Business Books, 2007; p 4

am very intrigued by this period of flux, and the changes in signification that this process brings to the now “old” form in contrast to its “new” replacement. I am specifically interested in contrasting analog/film versus digital/video’s treatment of, and relationship to, time and space in our contemporary context of media change, and tracing some of the potential individual and social impacts and effects of their respective spatiotemporal configurations.

Quid Pro Quo

In contrasting analog/film versus digital/video, I am, of course, establishing a potentially precarious binary; a tricky prospect, given that binaries are the dominant, problematic and *constructed* meaning-making forms of our late capitalist, colonialist, Christian-based culture. It is precisely for this reason that I have chosen to “set up” film and digital video into their own binaristic face off, in order to better see the connotative meanings that may show up more starkly when the two media forms are directly and oppositely – and admittedly, in many senses, falsely - contrasted. Let us begin.

Film is: analog, old, nostalgic; video is digital, new, contemporary. Film is discrete, specific, bounded, framed; temporally and spatially limited, finite and fixed. Digital video is general, constant, omnipresent, timeless and spaceless; multifunctional, flexible, accessible, everywhere / everytime, frameless and boundaryless. Film is deep focus, depth of field, resolution; video is sharp, flat and shallow. Film is scratched and colour shifted super 8mm home movies of special moments, briefly captured; video is long, durational, extended; multiple

recordings of every little domestic event, no matter how banal or incidental. Film is entertainment, leisure, Hollywood; video is television, the internet, work, surveillance, games, DVDs, skype, videoconferencing. Film is sleepy, video is: awake.

Film was the chosen cultural media form of modernity, representing and encapsulating the industrial capitalism from whence it came – chemistry, electricity, celluloid; the regular, mechanical time clicked off by the metronome of sprocket holes. Digital media - including video – is the chosen media form of the postmodern global capital “information age”: the collapse of time and space, computerization, convergence, ephemerality, blurred boundaries. As mentioned, we are in a transitional moment of media change, and transitional moments such as these provide a unique locus for reflection and critical analysis of each mode – both the “old” and the “new”. In the introduction to *Rethinking Media Change: The Aesthetics of Transition*, David Thorburn and Henry Jenkins write:

In our current moment of conceptual uncertainty and technological transition, there is an urgent need for a pragmatic, historically informed perspective ... a perspective that aims to understand the place of economic, political, legal, social and cultural institutions in mediating and partly shaping technological change.²

In order to ground the above binaristic list of associations of the now “old” media form of analog/film versus the “new” digital video, I will begin this paper by contextualizing and problematizing the juncture of media change that precipitated this binary of analog versus digital. I will then explore how each, now

² Thorburn, David and Henry Jenkins, ed., “Introduction” in *Rethinking Media Change: The Aesthetics of Transition*. The Cambridge: MIT Press, 2003; p 2.

binaristically opposed medium, contributed to the reconfiguration of the social and individual experience of time and space via their material representations of "timescapes". In particular, I will focus on how the current proliferation of digital media forms are impacting all of the waking timescapes of urban, Western life; from work, to leisure, to the in-between times and spaces. Working from the theory that any creative process requires a certain amount of idle time, I will then explore the potential impact of this total domination of our waking lives on our ability to imagine and engage in "creative interventions".

About the title....

A chronometer is a navigational device - it is a timepiece, used at sea, to determine your location. The click of the chronometer corresponds, via the sun and stars, to a spot on the chart; you are here because it is now. I have childhood memories of my father propped against the tipped railing of our sailboat, trying to get a reading of the sun. He would then go below, and do the math - this reading, with this time, against the lines on the chart; and he would point out to me, in that large emptiness between land masses, exactly where we were. Time is more than just time, it is also space, location, representation; and media forms can, through their spatiotemporal renditions - and/or distortions - alter our own relationship with, and experience of, time and space. This project is a chart, a subjective exploration of this axis of media change, from analog to digital. By contrasting how each media form encapsulates, represents and reflects time and space, I am hoping to have a better understanding of the forms I use, engage with, and re-produce, as an artist, activist, and citizen.

CHAPTER 1: CONTEXT - JUNCTURE

Media Change: Theory

While capital ...must strive to tear down every barrier...to exchange and conquer the whole earth for its markets, it strives on the other side to annihilate this space with time.
Karl Marx, *Grundrisse* (1857)

Every major technological shift within Western culture has reconfigured and/or redrawn our sense of time and space, and the wider socio-economic, political or cultural impacts have often been surprising and hard to predict. For artists who work with both film and video, the current cultural shift from analog/film to digital/video is of particular salience. Such shifts in the availability or format of a medium affect artists in a number of ways, from the most obvious (access to formats and the ability to work with them) to the less so (the changes in signification and meaning of the now-obsolete format). There are also issues of skill, access to training, and access to the now "new" or "old" accoutrements that accompany each medium to contend with.

However, as pointed out by a number of cultural theorists, such technological shifts are rarely as sudden or as total as we might think. We've been here before: the somewhat vertiginous experience of rapid technological change can in fact be seen as a marker of modern Western culture, regularly triggering anxiety and

euphoria in roughly equal parts. In *Rethinking Media Change*, David Thorburn and Henry Jenkins write

Similar utopian and dystopian visions were a notable feature of earlier moments of cultural and technological transition - the advent of the printing press, the development of still photography, the mass media of the 19th century, the telegraph, the telephone, the motion picture, broadcast television.³

Such shifts in the mainstream use of a technology can also lead to a period of general awareness and reflection, of both the "old" form and the "new", as Thorburn and Jenkins point out:

Yet the introduction of a new technology always seems to provoke a thoughtfulness, reflection, and self-examination in the culture seeking to absorb it. Sometimes this self-awareness takes the form of a reassessment of established media forms, whose basic elements may now achieve a new visibility, may become a source of historical research and renewed theoretical speculation. What is felt to be endangered and precarious becomes more visible and more highly valued.⁴

Thorburn and Jenkins (and other cultural theorists) further describe how the period of introduction of any new medium tends to also be its most experimental and creative period, before the new form is disciplined and constrained "by the conventions and routines imposed when production methods are established"⁵.

For myself as a media artist, this sense of a backwards-fondness for film coupled with a forwards-uncertainty for digital video certainly holds true. On the one hand, the threatened status of film makes its materiality all the more appealing and poignant, somehow, and this poignancy carries over into both my practice (as an experimental filmmaker) and my leisure (as an avid watcher of films, both

³ Thorburn and Jenkins; p 3

⁴ *ibid.*, p 4

⁵ *ibid.*, p 6

Hollywood and not). That film is an object that I can hold in my hands, that takes up space that I can see, places it, as a medium, in sharp relief against the ephemerality of digital video. On the other hand, the explosion of digital video, its accessibility, proliferation, and its ability to be flexibly used by so many and for so many purposes also appeals. The larger cultural uses and meaning of each form can therefore be mindfully used by media artists to add a material-based dimension to their work that draws upon the tensions between digital and analog at this juncture of media transition.

However, the danger here, for both theorists and artists alike, is that by focusing on "film versus video" and this current period of media transition, we may end up inadvertently mystifying the processes by which these types of technological shifts occur. In "Out With The Trash: On the Future of New Media", Jonathan Sterne points out that

Obsolescence is not only planned but also forced or engineered. The boundary between a durable and obsolete has as much to do with social relations as it does with the decline or decay of the object. Groups of people choose to make an object obsolescent, or they choose to sustain an object long after it would have begun to fall apart on their own.⁶

Film as an art form has thus far been maintained on the margins of mainstream society via film production and distribution co-ops and organizations, and the various independent film festival circuits. This marginal sustainment has been made possible, ironically, by the continued use of 35mm film by Hollywood,

⁶ Sterne, Jonathan "Out With The Trash: On the Future of New Media" in Charles R. Acland ed. *Residual Media*. Minneapolis: University of Minnesota Press, 2007; p 22

which has allowed a kind of cottage-industry side-production of 16mm, super 16mm and super 8mm by the major film stock producers (Kodak and Fuji). It is widely understood that once the big studios make the final switch to digital, these film producers will likely see this small-scale production of 16mm and super 8mm film stocks as an obsolete activity as well. The ability of a 'group of people' to sustain the film object past this production shutdown may soon be put to a very rigorous test. This said, here again is an area in which film can be sharply contrasted against digital video: it is actually possible for a person to *make* film, provided one can access its constituent parts – the chemicals and celluloid⁷, which, given our industrial past, are still relatively plentiful. It is also possible to hand-make a film camera, provided one has some mechanical facility and understands the basic principles of analog photography. In contrast, it is difficult to even imagine how someone would go about manufacturing their own digital camera, recording device, and/or hard drive, as the level of technology, tools, equipment and knowledge required would render this impossible: simply outside of the abilities of the average individual human hand and mind.

The basic fundamental, material difference between film versus video referred to here can be seen as reflecting a larger meaning beyond each form's homemade manufacturing possibilities. The shift from analog to digital - and the accelerated tendency towards obsolescence and technological obfuscation that is particularly associated with the latter – represents something larger than celluloid versus

⁷ DIY film emulsion machine: "Can't buy the film you want any more? Just make the stuff! In this set you will find random photos and information on a project a friend has undertaken – a machine to make his own camera film. Plastic and goop go in one end, and camera film comes out the other end. This is not a trivial undertaking." Source: http://www.flickr.com/photos/dark_orange/sets/72157603226919391/

bytes. In "New Lamps for Old: Photography, Obsolescence, and Social Change", Michelle Henning states

... those things that are so often identified as changes in media, or problems brought about by "new media", are actually social transformations. ... Indeed, we might view remediation quite differently, if, following Raymond Williams, we recognize that technological changes are never just material changes or even changes in way of seeing, but "altered processes and relationships in basic material production".⁸

Film as a medium is significantly more durable than digital video in all respects: film cameras are easier to fix and last far longer than their digital video counterparts, and film stock does not degrade as quickly as the various video formats, in either its pre or post production form. An example: while looking through my grandmother's super 8 and regular 8 home movies, I came across a spool marked "1939?". I loaded this 70 year old media form onto the projector and was treated to a black and white moving image of my own mother as an infant, moving and smiling, sitting next to her brother; a close up on her face as she squints up into a sunny day long since past. Durability such as this is not a quality much favoured by the producers of pretty much any product in our global capitalist system; as a culture, we seem to have wearily accepted the replacement demands of a market system of built-in obsolescence. Additionally, because film is an analog form, there are basic material limitations to its proliferation abilities; film can simply never exist everywhere at all times the way that digital video can. It is a medium bound both temporally and spatially: it takes time to develop the image, and its images take up real world space. Capital

⁸ Henning, Michelle, "New Lamps for Old: Photography, Obsolescence, and Social Change" Charles R. Acland ed. *Residual Media*. Minneapolis: University of Minnesota Press, 2007; p 49.

seeks diffusion, it is an expansive system, constantly on the lookout for more resources and markets, and it therefore follows that it will favour the development of a medium that is capable of matching its proliferating tendencies. For media artists, understanding these types of underlying motivations to mass technological change is crucial if we hope to *critically* utilize mass mediums in our practices.

By focusing on the waste left behind by an accelerated culture of obsolescence, Lisa Parks furthers the critique of the dangers of falling into an "old versus new" binary in her article "Falling Apart: Electronics Global Media Economy":

By considering electronic hardware in such a way, that is, as material objects that linger or persist, I hope to complicate reductive bifurcations of "old" and "new" media. What lies at the core of this distinction, I want to suggest, is not just a formalist concern about the shift from analog to digital aesthetics. Often lurking within the differentiation of old and new media is also an idle acceptance of capitalist logics (such as structured obsolescence) used to regulate the life cycles of electronics and computer hardware. By continuing to use terms such as old and new media without reflection or analysis, critical media scholars risk inadvertently reinforcing the imperatives of electronics manufacturers and marketers who have everything to gain from such distinctions.⁹

Film, as an "old" medium, does not *naturally* reference nostalgia, remembrance, or the past any more than digital video *naturally* signals speed, the new, and the global. These are carefully constructed associations that have everything do with the functionings of global capital, and only a little to do with the mediums themselves. This said, it can be very instructive to trace these constructed associations, in order to more deeply understand the interrelations between

⁹ Parks, Lisa " Falling Apart: Electronics Global Media Economy" Charles R. Acland ed. *Residual Media*. Minneapolis: University of Minnesota Press, 2007; p 33.

these mediums, mainstream culture and global capital. In "New Lamps for Old", Michelle Henning quotes Arjun Appadurai:

We have to follow the things themselves, for their meanings are inscribed in their forms, their uses, their trajectories. It is only through the analysis of these trajectories that we can interpret the human transactions and calculations that enliven things. Thus, even though from a *theoretical* point of view human actors encode things with significance, from a *methodological* point of view it is the things-in-motion that illuminate their human and social context.¹⁰

Following Appadurai - and keeping the above cautions and critiques very much in mind - I will now shift my attention to the "forms, uses and trajectories" of these "things-in-motion". What a thing *is* – and its uses and trajectories - of course affects the possible meanings it can generate; although, of course, what it *is* is not the only factor. As an artist who utilizes both film and video in my practice, and who, like the rest of us, also engages with both forms a great deal in my non-artist life, I have been very interested in looking at how the material of each form affects its usages and impacts. While this interest is related to my desire to have an engaged and aware art practice, I am also interested in this issue as a citizen / worker / activist / consumer; I see an interest in media forms as necessarily linking into an interest in society, history, economy. In *Hypercapitalism: New Media, Language and Social Perceptions of Value*, Phil Graham writes:

... technologies of mediation are the means by which we move, produce, store, transform, and distribute meanings through space and time. They are the means by which we organize, delineate, link and de-link people, places, and institutions.¹¹

¹⁰ Henning, p 50

¹¹ Graham, Phil *Hypercapitalism: New Media, Language and Social Perceptions of Value*, New York: Peter Lang Publishing, Inc, 2006; p 9.

Media engagement is not a one-way interaction, as any widespread cultural form tends to have a feedback of influence onto those who interact with it; mediums affect our cultures, but they can also affect the way we move, take up space, interact, view ourselves and each other. I am curious as to how this shift in media - from analog to digital - may, in turn, impact us as we go about our daily lives, from work to art to leisure and beyond. By focusing on how we tend to interact with the mass media forms of our culture, and by exploring how these forms then interact on us, I hope to come to a deeper understanding of the mediums of my practice, work, and leisure.

Media Change: Practice

My visual art practice started backwards. My first piece was shot on a professional digital video camera, and I edited it in a broadcast-quality Avid editing suite. Currently, I'm working with scratched up 16mm and super 8mm film that was developed in buckets full of dubious chemistry on the floor of a black curtained bathroom. In the middle somewhere was a video piece that was edited on an analog table, and there were, of course, a number of film/video transfers - in both directions - along the way. The form of digital video that I am most comfortable with - the miniDV tape and camera - is fast becoming dated; the cameras are rarely up for sale now, and the tapes are getting cheaper. The time span I am describing here is a scant 9 years.

While I've been perversely, perhaps, running the obsolescence clock backwards in my own practice, the fact remains that when it comes to film and video,

multidisciplinary media artists are faced with a number of interesting conundrums and contradictions when it comes to our mediums of choice. No artist's medium is ever outside of the culture in which it is utilized; that the palettes of 18th century painters expanded along with the borders of the empires that they called home is but one example of the interconnection between society, politics, economy and art. For media artists, this interconnection is enclosing; our chosen forms are not merely reflective of the larger socioeconomic setting, they embody (or disembody) it. In the context of the technovisual glut that typifies early 21st century global capitalist society, I can't help but look critically at the tools of my chosen trade.

First, there is the thing itself: the strip of celluloid film, and the digital videotape or disk. Film is a product of the industrial revolution – chemistry and mechanical invention, mixed with a de rigueur scientific enquiry into human optics. In contrast, digital video reflects the age of computers – microchips, bytes, data and compression. There are fundamental differences in way each medium captures time and space; film is chronology, it is syntagmatic - this happens, then this, then this - one after another, a tidy row of frozen times and spaces. Video is frameless¹², its image capture process invisible to the human eye; we can only see the dull brown-gray tape, or more bewilderingly, our own reflection off of the disc. Nothing and nowhere, digital video could be anything at all, or blank. This material difference can then be seen as reflecting the origin, context and function of each form. By tracing how each media form captures and reflects time and

¹² Interlaced video versus progressive video will be further explained later.

space, we can see a material snapshot of each form's impact on the contemporary conception of time and space.

CHAPTER 2: FILM/VIDEO TIME/SPACE

Each media form can be seen as a kind of chronometer; a device that reflects the measurement of its own time, that then impacts the current perception of space.

In this chapter, I will look at the chronometric aspect and impact of film versus digital video, and contrast how the way that the material of each form captures time and space can be seen as reflective of the wider social and political conceptions of time and space.

Film Timescapes

Film captures space and time via a "...flexible strip of cellulose acetate or polyester that is known as the *base*" that is "coated with a series of emulsion, coupling and filtering layers on which the image is formed and retained"¹³. Image formation happens

...when the emulsion layers of a film are exposed to light, the silver halide grains, which are an active part of the emulsion, undergo a chemical change that stores the pattern of light and dark areas in the scene as a latent image on the film. The latent image is so named because it is not immediately visible but must undergo further chemical reactions.¹⁴

The latent image must be made manifest; and in this we can see one of the dominant media forms of the Industrial age nicely reflecting one of the dominant

¹³ Jones, Stuart Blake et al. *Film into Video: A Guide to Merging the Technologies*. Boston: Focal Press, 2000; p5

¹⁴ *ibid.*, p8

theories of its day – Freud’s *The Interpretation of Dreams*¹⁵. The structure, material and usual usage of film can be seen as reflecting the larger societal view of time and space; in "New Temporal Perspectives in the “High Speed Society” ", Carmen Leccardi describes Castoriadis' (1987) concept of the “capitalist imaginary” as:

... the domination of nature through the unlimited expansion of (rational) control of the world. This imaginative world is fed by the philosophical concept, dating from the Enlightenment, of the future as a time to curb and control in accord with a world vision where (social) progress takes the place of (spiritual) perfection¹⁶

Film – particularly in its mass media, narrative form - reflects this philosophy; early travelogue films captured and contained the natural world into a linear strip comprised of rational, mechanical boxes of time and space, and the development of the narrative film form certainly fits with a wider cultural interest in a progressive, rational future. Film is an industrial product reliant upon the industrial age for its existence, and the philosophy of that age can be seen within its chemically coated, celluloid representations of neatly bounded time and space that march, at 24 frames per second – in such a structured, linear way! - towards a satisfactory narrative denouement. Film time is clock time, rational time, organized towards a progressive and positive future. And while film can certainly manipulate time and render it malleable, the sprocket holes attest that time is still attendant, even if it has been made elastic, and stretched along the celluloid. In

¹⁵ i.e. latent dream content versus manifest Freud, Sigmund; Brill, A. A. (Trans); "The dream-work", in *The Interpretation of Dreams*. New York: MacMillan Co., 1913; p 260-402.

¹⁶ Leccardi, Carmen *New Temporal Perspectives in the “High Speed Society”*, in Robert Hassan and Ronald E. Purser ed. *24/7: Time and Temporality in the Network Society*, Stanford: Stanford Business Books, 2007; p 28

film, time and space are still bounded: frame lines and frame speed, the necessary sync of camera and projector. Film allows us to play with time, but also makes us acutely aware of it; time is never forgotten. In "The Crisis of Cinema in the Age of New World Memory", Timothy Murray reproduces a quote from Godard's *King Lear* (1987), wherein film editing is described as "handling, physically, in both hands the future, the present, and the past"¹⁷. As industrial modern capitalism faltered in the face of its own limits and contradictions, the rise of a new global capital order begins to reconfigure a new relationship to time and space. In their introduction to *24/7: Time and Temporality in the Network Society*, Hassan and Purser write "the meter of clock time that drove the industrial revolution is now being compressed and accelerated by the infinitely more rapid time-loaded functions of high speed computerization"¹⁸. The wider cultural shift, and its reconfiguration of how time is conceptualized, is also described by Jones:

The sureties of progress, of predictability, of the idea of a discernible past and a future that looked positive – the lived realities of modernity's "grand narratives", in other words, were swept away by wave after wave of neoliberal globalization and the insertion of networked ICTs into every nook and cranny of social life.¹⁹

It follows that this radical shift in the cultural conception of time and space would both require and be reliant upon new media forms that could to better reflect its altered spatiotemporal orientation and expansive reach; a task that the

¹⁷ Murray, Timothy "The Crisis of Cinema in the Age of New World Memory: the Baroque Performance of King Lear" in Michael Temple and James S. Williams ed. *The Cinema Alone: Essays on the Work of Jean-Luc Godard 1985-2000*, Amsterdam: Amsterdam University Press, 2000; p170

¹⁸ Hassan, Robert and Ronald E. Purser, ed. *24/7: Time and Temporality in the Network Society*. Stanford: Stanford Business Books, 2007; p 11

¹⁹ Jones, p 9

mechanistic, industrial – and above all, spatiotemporally *limited* - form of film is simply incapable of.

Video Timescapes

In the simplest sense, digital video converts time and space into "a two-dimensional image using ones and zeros (binary)"²⁰. Digital video utilizes the raster type of digital imagery, which is defined as follows:

Raster images have a finite set of digital values, called picture elements or pixels. The digital image contains a fixed number of rows and columns of pixels. Pixels are the smallest individual element in an image, holding quantized values that represent the brightness of a given color at any specific point.²¹

Digital video is an "orthogonal bitmap of digital images displayed in rapid succession at a constant rate",²² which is arranged into scanned lines, called "fields". Interlaced digital video - which is still the most common form of digital video in wide use, in North America, at least - is described as:

In interlaced video each frame is composed of two halves of an image. The first half contains only the odd-numbered lines of a full frame. The second half contains only the even-numbered lines. Those halves are referred to individually as fields. Two consecutive fields compose a full frame.²³

In digital video, time and space are not framed in the "traditional" filmic sense; with interlaced video, the "imaging process is a continuous one, line by line and

²⁰ http://en.wikipedia.org/wiki/Digital_image

²¹ *ibid.*

²² http://en.wikipedia.org/wiki/Digital_video

²³ *ibid.*

frame by frame”²⁴. In video, time and space haven’t been caught in emulsion, but are instead restlessly and endlessly traced, or, as John Belton puts it in his article “Looking Through Video”, video is

... a continuous chain of electronic scanning. Video images are always in the process of their own realization. Their association with immediacy and presentness is partly because they are always in the process of coming into being.²⁵

Even in the case of progressive video, which captures time and space in manner similar to film – i.e., the entire image frame is scanned – unlike film, this complete scan is repeated and then overlaid. Now, and now again; two nows on top of each other. This time and space slippage – everpresence and everpresent – is nicely mirrored by the spatiotemporal reconfiguration of the new world order of global capital; the semblance is, of course, not accidental. In *Hypercapitalism*, Graham writes: “our new media must, in some fundamental way, underpin the emergence of this new form of political economy”²⁶. I posit that this ‘underpinning’ is the manner in which all digital media forms – including digital video – tend to collapse time and space; thereby facilitating the circumvention of the two fundamental limitations to the growth of industrial capital. In “New Temporal Perspectives”, Leccardi writes: “The new information and communication technology, for instance, fundamentally redefines the experience of space but also manipulates time, to the extent of destroying it as a historical dimension”²⁷.

²⁴ Jones, p25

²⁵ Belton, John “Looking Through Video: The Psychology of Film and Video” in Michael Renov and Erika Suderburg, ed. *Resolutions: Contemporary Video Practices*. Minneapolis: University of Minnesota Press, 1996; p 67

²⁶ Graham, p x.

²⁷ Leccardi, p 27

The articulation of a contemporary sense of a loss of history is by no means novel; Francis Fukuyama's business-orientated, positivist take on this issue in *The End of History*, and the resultant critical response, thoroughly analysed this concept throughout the early 1990s. I am instead speaking to the specific role of media forms in fomenting or adding to this sense of a loss of history. What began as a logical progression of the capitalist push to extend past the limitations of time and space - in part to facilitate even greater growth, reach and therefore, profit potential – can be seen to contain, at its core, a more ominous motivation. If we accept that culture is a form a collective memory, that can be used to position a society within a spatiotemporal context, thereby giving meaning to past, present, and future, then we can understand that the manipulation of the representation of time is a political act. Modern industrial capital was future-orientated and progressive, and, in general, looking away from the past; in media terms, the teleological click of the filmstrip ticking towards its narrative resolution. This sense of a progressive future to look forward to has been faltering for some time now; Leccardi writes:

From the mid-20th century onward the dominating vision of the future as an open field of possibilities tends to fade away little by little. A constellation of elements helps to explain this dwindling belief in the future as a time of progress: from the loss of finalistic orientations of history to the enormous extension of the field of possibilities linked to the rapid development of information and communication technology, from the threat of an imminent ecological / nuclear catastrophe to present day international terrorism.²⁸

In "CyberLack", David R. Loy writes

What does it mean, then, when the future (the "progress" narrative we keep telling ourselves) collapses? The optimism of politicians and advertisers is becoming less persuasive. The environmental crisis no longer merely threatens; ecological collapse and climate change are upon us. The oil age will end in the not-too-distant future. We live in

²⁸ Leccardi, p 29

increasing fear of weapons of mass destruction, whether by terrorist groups or by terrorist nation-states. But, of course, we are also unable to revert to a premodern sensibility preoccupied with rituals that will keep the sun on its course. In short, we cannot find security by clinging to the past (traditional ways of doing things), nor do we expect to build a brighter future (contributing to the march of progress). That leaves the present, but there are different ways of experiencing it. One reaction is the increasing distractibility that all our new technological devices encourage: cell phones, iPods, etc are always at hand.²⁹

The cultural bias of the prior age of industrial capital was ahistorical – a troubling enough bias on its own – and the cultural bias of our current age is afuturistic; we are now left in a decontextualized present. Now, and now again. Leccardi writes: “Social acceleration leads, for its part, away from the concept of an open future: the future withdraws to the present and wears out before even being born”³⁰ In this context, digital media forms are both handmaiden and harbinger; facilitator and mirror. A reproduction of the times that is reproducing timelessness. Now that we have thoroughly looked at, into and through how the respective media forms of film and video capture and reconfigure time and space, it is time to turn our attention to some of the spatiotemporal “uses and trajectories” of film versus video.

²⁹ Loy, David R. “CyberLack” in Robert Hassan and Ronald E. Purser ed. *24/7: Time and Temporality in the Network Society*. Stanford: Stanford Business Books, 2007; p 101-2

³⁰ Leccardi, p 30

CHAPTER 3: IDLENESS VERUS “LEISURE” IN THE DIGITAL AGE

Time itself, lived time, no longer has time to take place.

- Jean Baudrillard *The intelligence of evil or the lucidity pact*, (2005)

There are the timescapes contained within and reflected by the forms of film and digital video, and these material (or immaterial) timescapes can also be seen as related to, and reflective of, the larger cultural, economic and political context from which each medium sprang. As previously outlined, our contemporary context is that of a neoliberal global capital entwined with and reliant upon digital ICTs; a context that is positioned here as resulting in a generalized – and profit-motivated – collapse of time and space. In "CyberLack", Loy quotes business writer Regis Mckenna:

Imagine a world in which time seems to vanish and space seems completely malleable. Where the gap between need or desire and fulfilment collapses to zero. Where distance equals a microsecond in lapsed connection time.³¹

It could be argued that, for the Western world, at least, this time is now. In "New Temporal Perspectives", Leccardi writes:

... to sum up, it can be stated that this type of time creates the conditions for a drying up of the dimension of the present as a space for meaningful action. In fact, with the

³¹ Quoted by Loy, p 196

disappearance of “temporal time” comes the disappearance of the possibility of creative intervention in the world.³²

The concept I want to emphasize here is the idea that “creative intervention” – a phrase that I have chosen to interpret widely, including with in it art, activism, scientific enquiry, community involvement, philosophical thought and all other forms of creative invention and engagement - requires “temporal time”. I will now turn my attention to investigating the current global capital timescape, its historical trajectory, and the relationship between this timescape and our ability to engage in creative interventions.

Idle hands are the artist’s playthings

First, a personal observation: when I started producing experimental videos and films, I began to notice, more specifically, the times and spaces under which creative inspiration would strike: that is, more or less randomly and unpredictably. Contemporary artists – or at least, those I know – rarely ever talk about where, when or how they arrive at their concepts for their work. On the few occasions that I have had this conversation, it has tended to veer very quickly into a kind of alarmed mysticism. There is often a great deal of superstition and private ritual involved, and in this respect, artists remind me of the sailors I grew up around; while most artists I know don’t attempt to appease any specific gods, spirits or saints, there is that same sense of powerless appeal. Personally, I don’t know where my creative ideas come from; they seem to happen at odd times and places, and it is a process that refuses to be forced. This often leaves me feeling

³² Leccardi, p 31

frighteningly bereft and out of control of my own creativity; as if I were a Romantic artist pining for a muse. It's all so painfully cliché. And also, often, just painful. What I have noticed, though, is that the timing isn't entirely random: the ideas that I have worked into art have almost invariably come from being in a distracted or daydreaming state. Or while waking up from, or falling, asleep. Or while doing some kind of nothing – waiting, looking out of the window of a bus, lying in a park.

This led me to think about creativity more generally, and I discovered that it appears that it is not only artists who often trip into their best concepts this way – there are innumerable references to physicists, philosophers, biologists, writers, chemists, and mathematicians who also experience this kind of accidental inspiration. Some of the most respected literature, art, philosophy, and mathematical and scientific theories in Western culture have been uncovered in just this way. Mary Shelley imagined Frankenstein while in that limbo between sleep and wakefulness³³, Otto Loewi's bedside scribble mapped out the chemical communication of neurotransmitters³⁴, Dmitry Mendeleev visualized the periodic table³⁵, and Friedrich August Kekulé von Stradonitz dreamt of the atomic structure³⁶. There are many other examples. While some may see these stories as somewhat folksy, or as a glib underestimation of the real days, months or – in

³³ Mary Wollstonecraft Shelley, "Introduction", *Frankenstein*. London: Penguin, 2003; p 11.

³⁴ Donnerer, Josef., *The Chemical Languages of the Nervous System : History of Scientists and Substances*. New York : Karger, 2006.

³⁵ Baylor, George W. " What Do We Really Know About Mendeleev's Dream of the Periodic Table? A Note on Dreams of Scientific Problem Solving" in *Dreaming: journal of the Association for the Study of Dreams*. New York : Human Sciences Press, Volume 11, Number 2, 2001; p 90-2.

³⁶ Donnerer, p 74-5.

the case of Loewi, 17 years – of waking work that must underpin such chance inspiration, the fact is that there is a large trove of documented and anecdotal evidence that indicates that creative inspiration often strikes in those idle times and spaces, when we aren't actively looking for it.

This in turn started me thinking about the importance of idleness and reverie for creative production, and the fact that in the West it is exactly this type of idle, nothing-doing time that is most under attack. Thanks in part to the rise of industrialization, our modern culture demands constant productivity during our waking lives, and these demands have, in turn, been steadily eating away at both our idle time and our sleep lives. As a society, we sleep less, and less deeply, than we used to: in 1960, the average person slept for 8 or 9 hours per night³⁷, whereas recent studies put this number at 6.1 hours per night³⁸. We also work longer hours than the previous generations, with recent studies clocking the average Canadian work week as between 44.1 to 53.2 hours per week³⁹.

Most of us also do not now believe that we have any real entitlement to *true* idle time, which is very different type of non-work time than the capitalist-controlled construct of “leisure time”. This is unsurprising, given that our right to engage in aimless inactivity has been under a sustained attack within Western culture since the early 18th century. Early publications utilized the invention of the printing

³⁷ Kripke DF, Garfinkel L, Wingard DL, Klauber MR, Marler MR. “Mortality associated with sleep duration and insomnia”. *Archives of General Psychiatry* 2002;59(2):131-6.

³⁸ Lauderdale D, Knutson K, Yan L, et al. “Objectively measured sleep characteristics among early middle-aged adults: The CARDIA Study”. *American Journal of Epidemiology* 2006;164(1):5-16.

³⁹ Gilles Pronovost, “Le temps dans tous ses états: temps de travail, temps de loisir et temps pour la famille à l'aube du XX^e siècle”, Policy Matters: Family Policy, Montreal: Institute for Research in Public Policy, 2007.

press to extol the virtues of labour, industry, and business while vilifying idleness. The existence of these publications indicates a belief that people – and in particular, the poor and working classes - had to be shamed and coerced out of their natural tendency towards inactivity. The 1707 publication of *An Essay upon idleness: or, Chusing to live without business* carries the following catchy rhyme on the frontpiece: “He that Nothing loves to do, will prove good for Nothing too”. Hawes elaborates:

For Experience has taught the World; that he who spends his day in Idleness, is
First, a Burden to himself,
Second, a Reproach to his Maker, and
Third, a Scandal to the Whole Creation.⁴⁰

In 1747, the English satirist and printmaker, William Hogarth, produced a sequential portrait series titled “Industry and Idleness”, which contrasts the lives of two apprentices. At the end of this rather harsh morality tale the industrious apprentice is an alderman, while the idle apprentice ends up on the gallows⁴¹. There are innumerable other examples of this type of moral instruction regarding the evils of idleness from this period.

The onset of industrialization only intensified this generalized disdain for idleness, as the demand for long hours of factory labour applied even greater pressure on the off-time of the average worker – 14 to 16 hour days left little time for anything other than a truncated sleeping schedule and inadequate meal

⁴⁰ Hawes, W. *An Essay upon idleness: or, Chusing to live without business*, London, 1707. p 3.

⁴¹ Hogarth, William "Industry and Idleness" 1747.

times. While the unholy communion of the Protestant work ethic with the demands of industrialized capital progressively whittled away at the available non-work time for the average worker, even those members of society who had access to greater amounts of leisure time were encouraged to engage in *productive* leisure activities – sports, hobbies, and the like. Once a certain period of stability and relative general affluence was reached, “leisure” could be extended to the working class. As Ben Agger writes in "Time Robbers, Time Rebels", “There is a telling dialectic at play here: as people enjoy shorter work hours, they must be encouraged to use those hours in ways that benefit capital”⁴². Agger describes Ford’s implementation of the factory “sociological department: “Ford identified the need to free people from work time so that they could spend money and restore themselves after the drudgery of factory labour”⁴³, but he “couldn’t be certain that his workers would handle their doubled wages and an extra day of weekend time responsibly”⁴⁴. Agger elaborates:

In a stunning and prescient move – anticipating the total administration of time more than half a century later – Ford created a “sociological department” staffed not by degreed academic sociologists but by people who functioned as social workers, truant officers, and union busters so supervise workers’ use of time and money. Members of the sociological department went door to door and canvassed Ford workers to make sure that they were not absent from work and were not drinking away their wages. The sociological department also forcefully resisted Walter Reuther’s attempts, in the 1930’s, to unionize auto workers. Well before Foucault, Ford understood that people needed to be supervised (or believe that they are being supervised) so that they “spend” (in both senses of the term) their leisure responsibly.⁴⁵

⁴² Agger, Ben “Time Robbers, Time Rebels: Limits to Fast Capital” in Robert Hassan and Ronald E. Purser ed. *24/7: Time and Temporality in the Network Society*. Stanford: Stanford Business Books, 2007; p 222

⁴³ Ibid., p 220

⁴⁴ Ibid., p 222

⁴⁵ Ibid., p 222

Here we can see that the construct of “leisure” time is actually an extension of work-time, resulting in true idle time becoming even rarer, as the temporal pressures of work, a sanctified, productive “leisure”, and the human need for sleep and food ends up absorbing the entire day. This is also a total absorption over time, as industrial capitalist work patterns are unceasing, rather than circadian or seasonal - 365 days a year.

The digital age has only intensified this problem; adding a 24/7 dimension to the 365. While the amount of non-work time available to any given person in Western society is obviously shaped by factors such as class, race and gender, there remains overarching trends that can be generalized to wide sectors of the population. What non-work time that is available to any given person has been increasingly given over to a kind of *productive*, consumerist leisure – shopping, hobbies, and the like - and true aimless inactivity is becoming more and more rare.

Work/Leisure and Technology

First, technology has increased the reach of our work lives, so that even when we aren't at our work sites many of us are still expected to be at least somewhat accessible, which effectively blurs and/or erases the spatial and temporal lines between “work” and “non-work”. Secondly, there exists a generalized pressure to be always doing something – a task, chore or errand - as centuries of anti-idleness propaganda have succeeded in making most of us uneasy at the prospect of appearing completely unoccupied. Lastly, the technological devices

foisted upon us by our consumerist culture have a tendency to demand usage; the BlackBerry in our pocket seems to insist upon interaction, or else why own one? This pressure to be constantly productive, coupled with the use demand of our technological devices, often translates into a visible and palpable anxiety. I end up returning phone calls or emails – or worse, playing games – on my cell phone while I’m waiting for the bus. The compulsion to multitask is too intense to let myself simply wait, and I don’t think I’m the only one – I see the same techno-twitch in my fellow city citizens. Whenever and wherever there is a pause, it must be filled with an activity. Digital technology has successfully colonized the small amount of idle time that was left to us, and by doing so, it is also reconfiguring our relationship to the spaces that we inhabit and move through; no longer able to simply be in the here and now, we repetitively use technology – iPods, cell phones, iPhones - to take us elsewhere.

This colonization of our time and space is furthered through the digital convergence of our working lives. Almost all skilled workers, from a dizzying array of industries, use the same device. Whether you are an accountant, a writer, a stockbroker, a graphic designer, or a statistician: most of us now do our work while sitting in a (hopefully ergonomic) chair and staring at a (hopefully flat) screen. As a video editor and student, I stare at the same device that I stared at in my previous incarnations as: call centre employee, equipment co-ordinator, used book seller, managing editor, gallery assistant, research assistant, writer. Eyes and wrists twitching, our various work lives have been compressed into one type of work experience.

This in itself is an unsettling fact of Western life; what concerns me even more is that our “leisure” is experiencing digital convergence as well. A great many of us turn to those same screens when we’re looking to take a break; we download movies or TV shows, or play online games, or cruise social network sites. Or all three at once. Sometimes a work email might intrude, and we’ll deal with that as well. Although people also sometimes do these types of leisure activities while on the clock, this act of minor labour sabotage does not alter the overall picture: when viewed from the outside, the distinction between our work lives and our leisure lives is being blurred, if not erased. If we add in our use of technology while not engaged in either work or leisure – during those brief moments of idleness that are left to us - the digital colonization of our waking lives can be seen as complete.

This problem is larger than one of simple over-busyness, as the lack of time or space to really consider our world and ourselves means that our ability to engage in any kind of creative intervention against the status quo is severely limited. In the introduction to *24/7*, Hassan and Purser write:

...as the stories we told ourselves no longer made the same sense, and as the routines we had built into our lives no longer seemed appropriate (not fast enough or “productive” enough), and as the shape of the real world no longer reflected what we had been brought up to believe was worthwhile and enduring, profound ontological and epistemological questions began to emerge. The innumerable existential and practical dilemmas that the new world had furnished – for academics, for artists, for anyone who would stop and reflect on his or her condition – were neatly summed up by Michael Hardt and Antonio Negri when they observed, “At the end of modernity reappear the unresolved problems of its beginnings”⁴⁶

⁴⁶ Hassan and Purser, p 9

For Hassan and Purser, the “unresolved problem” is “our individual, social, and cultural relationship with time”⁴⁷. For myself as a media artist, I am concerned with how this problem of time – and the impact this has the individual, social and cultural levels – is implicated within the mediums I use for my practice. This led me to wonder about the one time and space of our life that is – for the time being, at least – off limits to digital incursion, namely, our sleeping, and therefore dreaming, lives.

This direction, interestingly, led me back to film. This is perhaps not that surprising; on the one hand, there is a long and layered historical association between dreams and film. On the other, this association between film and dream can also be seen as an inevitable result of the binary I established at the outset; if digital media is the medium that dominates our entire waking lives, then it – perhaps – makes sense that film would therefore take up a position as the medium of sleep and dreams.

⁴⁷ Hassan and Purser., p 9

CHAPTER 4: SOMNOLENT CULTURE

"I know it's a cliché to say that films are like dreams -- like a collective unconscious," Terry began, "but I was thinking that nobody's ever really followed the idea through."

- Jonathan Coe, *The House of Sleep* (1998)

Our waking timescape is currently largely dominated by the “awake” digital media forms of a neoliberal, global capitalist system. I have outlined a culture of increasingly hyper-productive multitasking, that is, in part, a result of the digital technologies of global capital, where the time or space for idleness and reverie is in very short supply. In looking for the times and spaces that may exist outside of the awake, digital media timescape, I ended up looping back to the one of the few analog “leisure” experiences that many of us still engage in – i.e. watching 35mm films in a darkened, public theatre. This type of analog visual media experience does contain a nostalgic, almost quaint, quality, particularly when contrasted with the intensive proliferation of digital imagery that we interact with on a daily basis. Contemporary experimental film practices often emphasize this association via shooting dreamy, blurry images or by incorporating found footage. Curious as to whether this connection between memory (found footage) and dreams (blurry or time-distorted footage) might also be connected to the film form itself, and/or its current significations at this juncture of remediation, I began to specifically research dreams and films. While Freudian film theorists have definitely “followed the idea through” when it comes to dreams, film and the

unconscious, for this project I am interested in the respective timescapes of dream versus film, and the potential impact or meaning of any similarities between the times and spaces of dreams and films.

Dreams/Films

Film has long been associated with dream states; Hollywood itself references this through the oft-applied moniker of the "dream factory", and there are innumerable references to the similarities between films and dreams made by psychologists, theorists, directors, actors, writers, philosophers and the film-going public at large. While researching this line of enquiry, I came across a small number of publications by neuroscientists and philosophers who validate this intuitive association. Although "dream study is a young science"⁴⁸, it is an inherently interdisciplinary study, which has led some theorists to investigate the cognitive and neuroprocessing similarities between the dream state and the film watching state⁴⁹. Curious as to how far I could "follow the idea through", I began to look at the time and space of dreams, as presented from a neurocognitive and philosophical perspective, and compared these to the time and space of mainstream film viewing.

There are four specific aspects of the dream timescape that are shared with the mainstream film timescape: 1) the narrative structure; 2) the associated affective,

⁴⁸ Pagel, J.F. *The Limits of Dream: A Scientific Exploration of the Mind/Brain Interface*. Oxford: Academic Press, 2008; p 2.

⁴⁹ For this paper, I will be using the phrase "film watching" to refer to the state of mainstream film watching - i.e. 35mm prints that are projected for approximately 90 minutes in a darkened movie theatre.

"base"⁵⁰ emotional state; 3) the lack of conscious control; and 4) temporal and spatial limitation. I argue that these four facets, taken together, represent the most significant similarities between dreams and films, as well as the most significant differences between the act of watching a mainstream film versus the act of engaging with mainstream digital media.

As any dreamer could tell you, our dreams tend to share many of the narrative qualities of the other narratives that are found in human cultural production - oral storytelling, literature, fables, plays, films. Pagel writes:

There are typically narrative storylines to dreams. As dreams progress, they begin to obtain a conceptual framework that include the preconditions for a narrative or story structure. ... The dreamer requires no training or critique to learn to present a dream as a narrative. ... Dreams foreshorten and expand stories as is typical of waking narratives.⁵¹

Although Pagel points out that most literary narratives have a beginning, a middle, and an end, many dreams are instead "all middle with occasional crises." However, this "all middle" sensation could also be applied to many feature films - there is often a sense that the movie goer has been dumped into an in-progress storyline, and they are then provided clues as to what is happening, has happened, or is about to happen (or all three). In any case, there is a clear formal and structural correlation between the dream narratives in our minds and the film narratives on our screens.

⁵⁰ The term "base" refers to those emotional response that originate from the amygdale, and circumvent the prefrontal cortex; it is not intended pejoratively, as these emotional responses are tied to our basic survival mechanisms.

⁵¹ States (1993) quoted by Pagel, p 124.

Linked with this narrative form is the impact and import of the content; it is important to understand that for both films and dreams, narrative, its content, and its emotive impact all act as three parts of a larger whole. In *The Power of Movies*, Colin McGinn states:

Dreams, as everyone knows, are emotionally charged; they are also sensory in character - particularly, visual and auditory. But these two components of the dream are not independent of each other: they are fused together into a seamless whole. ... Dream imagery is pregnant with strong affect: the visual is the visceral, and vice versa.⁵²

This emotional affect is of a particular kind, as both film states and dream states are associated with our so-called "base" emotional states: terror, anxiety, wish fulfillment and desire characterize both the most vivid dreams and the most popular film genres. In both films and dreams, these powerful, irrational emotions are woven together with vivid visual content into a narrative structure, to best manifest their full affective impact. In *The Limits of Dream*, Pagel writes

When dreams tell stories, these stories are scripts made out of universal concerns... . There are a series of consistent almost universally experienced dreams of flying, chase/attack, drowning, poor test performance, nakedness, and dreams of being trapped.⁵³

While the universality of this list could be up for debate, I certainly agree that, in a Western context at least, this list functions as a list of both common dreams and common films.

⁵² McGinn, Colin *The Power of Movies: How Screen and Mind Interact*. New York: Pantheon Books, 2005; p 103

⁵³ Pagel, p 124.

Both films and dreams have a narrative structure, and both weld this structure to the most powerful imagery possible in order to maximize their emotional affect. Specifically, dreams and films tend to play on variations from our emotional baseline of desire / fear. The main difference being, of course, is that our dreams use our own stored up memories to generate night-time storylines to terrify us or tantalize us, whereas our film "dreams" are directed by someone else's mind entirely.

This difference, however, can actually be cast as similarity. We do not control our own dreams any more than we control the direction a film is taking while we are in the theatre. The only real control we have over either timescape is one of avoidance - we could try to not sleep, or - more achievably - to never go to the cinema. Or, once we are trapped within a nightmare or a horror flick, we could try to wake ourselves up or walk out of the theatre; but these, again, are avoidance tactics only. What we do not have, while we dream or "film", is conscious control. Pagel summarizes:

Dream images also differ from waking images in that they are generally out of our conscious control. In this way dream imagery resembles the projected imagery of film in which the spectator "gives over" conscious control or perceptual input to the filmmaker.⁵⁴

This lack of conscious control can be seen as a powerful cognitive state in its own right, and is perhaps one of the more significant similarities between the dream state and the film watching state. On the surface, this would appear to be a potentially dangerous analogy, as a "lack of conscious control" implies

⁵⁴ Pagel, p 103.

passivity, susceptibility, irrationality. It is one thing to give up conscious control to your own mind, but it is quite another to consider that a similar conscious submission may be happening while you're taking in the latest James Bond film. The neurological fact of this passivity lends some credence to the fears expressed by many film critics and theorists regarding the potential of film to manipulate and distort the consciousness of its audience. Leaving aside the debate on the power of film to manipulate - in both its pro and con forms - I would like to posit that there may be something redeemable about this effect. I argue that, perhaps, being out of conscious control - particularly for the limited times and spaces that are our dream and film states - may actually be a good thing. This point will be addressed more fully shortly.

The respective time and space of reception for dreams and films is the final similarity between these two states up for discussion here. First, there is the obvious - the darkened movie theatre, and the night-time stage of our dreams. And then there is the less obvious - films generally run for about 90 minutes to two hours, and the more recent studies theorize that we dream for about two hours each night⁵⁵. The point here being that both dream timescapes and film timescapes are specific, discrete, and limited; they are bounded both spatially and temporally. While we are dreaming, or particularly drawn into a film, our sense of time and place may be distorted or altered, but both dreams and films take place in specific spaces and are of a limited duration. We don't dream

⁵⁵ McGinn, p 145.

everywhere⁵⁶, and we visit a specific site to see a film. Every dream ends, and the credits roll on every film. Both films and dreams share this sense of temporal and spatial limitation.

Finally, there is one remaining connection between dream and film that I want to address here, and that is the issue of memory. At the beginning of this section, I pointed out that the use of found footage by experimental filmmakers often adds a dreamlike quality to their work. This dreamlike quality is related to the fact that our dreams rely upon our own stored up memories to fashion our nighttime narratives; old memories and the day's events may blur together in new and surprising ways, but the past is definitely present. In this sense, too, then, the connection between film (found footage) and dream (memory) exists as an interesting counterpoint to the awake, ahistorical and afuturistic timescape of digital media.

⁵⁶ There have been some interesting cognitive processing theories that posit that hallucinatory mental illnesses – such as schizophrenia or psychosis – may in fact be due to the brain not being able to distinguish between dream life and waking life.

CHAPTER 5: FRENETIC CULTURE

The four specific, interlocking similarities between the dream state and the film watching state that I outlined above - the narrative structure, the associated affective, "base" emotional state, the lack of conscious control, and the spatial and temporal limits - are not so easily transferred to our experience of engaging with digital media; there are glitches and artefacts, a possible generation loss. Again, I am returning to Appadurai's "things-in-motion", and when we look more closely at the timescapes of digital media's "forms, uses and trajectories", the sense that digital video represents a very different kind of media - and a very different kind of media experience - comes into focus. As I previously stated, the four similarities between films and dreams I describe are *interlocking* similarities; i.e. mainstream films and our dreams are generally narratives that trigger base emotional reactions, which are spatially and temporally limited, and occur outside of conscious control. When we use this framework as a lens through which to look at digital video, and contrast it to its film ancestor, a number of interesting variances become apparent.

Digital/Awake

While digital video narratives obviously exist, they are primarily in the form of the reproduction of narrative films. There is also the issue of the digital medium simply absorbing the commonly used structures of its analog precursor. As Thorburn and Jenkins point out: "Old mediums rarely die; their original functions

are adapted and absorbed by newer media"⁵⁷. Digital media itself tends towards more non-narrative uses and expression; the Internet and broadcast television representing the most obvious examples of this tendency towards an open-ended structure. In both cases, the medium tends to link onwards and outwards; you can enter at any point, connect to any number of different themes and content, and then leave at any time. It runs on, 24/7, whether we are watching or not. Its edges are either blurry or non-existent, and therefore generally too porous to generate its own version of the contained strictures of the narrative form.

We also tend to engage with digital video in a much more self-directed manner: we click here, read that, see this, click there. While there is an interesting associative element to this type of media engagement - a kind of accidental tripping into tangentially connected subjects and themes - these are still conscious acts. We may not quite remember how we got there from here, but we made each click decision consciously. Additionally, we are never quite fully immersed by the digital experience; occurring, as it usually does, in the domestic or work spheres, digital media is always threatened by an incoming distraction. A task, an email, a chore. The way that our bodies interact with digital video versus film is one of the sharper distinctions that can be made between the two; we gather in public groups, in a designated place, to watch mainstream films for a specific length of time. In contrast, most of us slip in and out of digital video spaces constantly throughout any given day. Our work likely involves a monitor

⁵⁷ Thorburn and Jenkins, p 12

at some point, through which we probably mix productivity and leisure throughout each workday. Our designated "leisure" time usually involves either a television screen or a computer monitor as well. These are individual and/or private engagements, for the most part, no matter how many social networking sites we may belong to.

Because we are never fully immersed, and because we are always consciously driving our digital media experiences, we are always somewhat "productive" in our engagement. While connected with digital video, we are never quite unhinged from our critical, conscious selves. On the surface, this could arguably be a good thing. As my preceding discussion on films, dreams, and the kinds of idle down time required for creative intervention indicates, however, I fear this isn't so. When I think of a possible future in which our "leisure" is always productive, where our critical faculties are never "off" during our waking lives, where the lines between work and non-work are made unclear by the sameness of the tools at hand, I get very nervous for our ability in that context to have the mental space required for associative, dream-like thinking. In the context of a culture which privileges busyness and productivity over any kind of idleness, I worry about the ease with which our engagement with digital media perfectly fits into a model of busy/leisure. While going to see a film is hardly a counter-cultural act, it is a definitive leisure activity that happens to give our overheated heads a bit of a break, for 90 minutes or so at a time⁵⁸. It isn't much, but it's something. When we lose this - and other - definitively non-work activities, and when we lose

⁵⁸ McGinn states that Wittgenstein apparently used to watch American Westerns & gangster movies when he needed a break from thinking; p 136.

even more sleep / dreamtime, what will become of our ability to think creatively? After all, it isn't only artists who will suffer from this increasing encroachment of all of our non-work time; philosophers, writers, and scientists also require creative time and space in order to invent, think and write. Academics and theorists and activists too. There is also something alarmingly superficial about the way digital media forms encourage us to think and act; a kind of shallow skimming over of the news and events of a community, nation, or world. While we aren't there yet, it concerns me when I think about a future where we may have all gotten used to an overmediated, underslept life and a distracted and scattered way of thinking about and engaging with the world, and we simply can no longer imagine a different way of being. Which brings me back to the neuroscientists.

Synapse Snap

Human brain function is obviously a very complex area of study, and most of the theories espoused here (and elsewhere) are theories, which may or may not prove to be true. Current models of brain function posit that our minds process sensory information and memory via neural networks, which are:

A group of neurons that are wired together as a result of convergent inputs coming from a particular object or group of assembled objects that simultaneously stimulate this group of neurons. As a result, these neurons will fire together when they confront the same or similar object and object relations.⁵⁹

⁵⁹ Neidich, Warren *Blow-up: Photography, Cinema and the Brain*. New York: DAP, 2003; p 178

Current neuroscience and cognitive processing theory posits that these neural networks are adaptive, in that these networks are pruned or reinforced according to stimulus, need and use (or the lack thereof)⁶⁰. This means that the repetition of an action or stimulus can strengthen a neural network, because the repetition causes the synapses to synchronize more efficiently⁶¹. This can, in effect, create efficient neural “grooves”, where repeated sensory input causes efficient neural networks, which in turn causes a more efficient perception of the repeated stimulus the next time around: a feedback loop⁶². While the majority of neural network development and pruning happens during brain maturation, adult brains do retain some adaptability⁶³. Another aspect to consider here is the fact that humans are extremely visual creatures; the processing of visual stimulus takes up more networks, and incorporates more parts of the brain, than any of our other senses⁶⁴.

If we take these two facts together, our current cultural context looks something like this: a mass of adaptable neural networks that are being repetitively reinforced by a glut of digital imagery and the behaviour associated with its consumption. It is a scary thought, and an impact that was simply not achievable by analog means – film, as a material, could simply never have had the reach that digital media has. The constant bombardment, repetitive engagement, conflation and convergence that is the hallmark of digital media, are the

⁶⁰ Goertzel, Ben *From Complexity to Creativity: Explorations in Evolutionary, Autopoietic, and Cognitive Dynamics*. New York: Plenum Press, 1997; p 45-6, p 255

⁶¹ Neidich, p 26

⁶² Goertzel, p 190

⁶³ Neidich, p 26

⁶⁴ Frackowiak, Richard S. J. *Human Brain Function*. Amsterdam: Elsevier Academic Press, 2004. p 95.

hallmarks of a powerful, ephemeral, and adaptable form, perfectly suited to further the aims of the culture of global capital from which it sprang.

OUTRODUCTION: APOCALYPSE ~~NOW~~ LATER

This is, of course, an apocalyptic anxiety; a somewhat misanthropic and deterministic tale; the future is likely to be far more complex, surprising, contradictory and unpredictable. In "New Temporal Perspectives", Leccardi writes:

We know that in societies change is never exclusively the result of social/natural processes and events but always that of the relation between these processes and these events and their interpretation by individuals and groups.⁶⁵

Most of us are spectacularly adept at adapting and altering the various forms and structures in our lives, and it is crucial to not discount our ability to flexibly respond and resist to any socioeconomic times or spaces that oppress us. It is also important to understand that mass media forms, and their impacts, are not experienced monolithically, or evenly. In "Speed = Distance/Time", Mike Crang quotes Grosz:

There are multiple speeds implied in network time spaces. Rather than thinking simply of an endless onward rush, we might look at them as a turbulent torrent. There are back eddies, ripples, fast parts, slow pools, and so forth, and flows may be braided and overlain (Grosz 1999).⁶⁶

⁶⁵ Leccardi, p 31

⁶⁶ Crang, Mike "Speed = Distance/Time" in Robert Hassan and Ronald E. Purser ed. *24/7: Time and Temporality in the Network Society*. Stanford: Stanford Business Books, 2007, p 84

These types of back eddies and slow pools can be critically utilized by activists, workers, theorists, inventors and thinkers. There is also, obviously, an exploitable advantage to the omnipresence and everywhere-ness of digital media forms: it is this very quality that can make these forms that much more difficult to contain and control than their analog precedents. A current day example: while Twitter has been mostly utilized to broadcast the most mundane and banal daily minutiae of its first world subscribers, a recent co-optation of its digital technology points to a far more relevant and potentially life-saving use:

If anyone is on twitter, set your location to Tehran and your time zone to GMT +3.30. Security forces are hunting for bloggers using location/timezone searches. The more people at this location, the more of a logjam it creates for forces trying to shut Iranians' access to the internet down. Cut & paste & please pass it on.⁶⁷

In the cultural spheres, media artists who critically use their mediums are another example of this type of resistant approach; in the introduction to *Practical*

Dreamers: Conversations with Movie Artists, Mike Hoolboom writes:

What would it be like if we saw movies made by individuals instead of corporations? What if there were movies made the same way as suits, custom-fitted, slimmed down for one person? Not broadcast, but narrowcast; not theatres around the world showing the same movie (the globalization of pictures) but instead a local circumstance, a movie so particular, so peculiar, it could cure night blindness or vertigo.⁶⁸

As Hoolboom goes on to point out, such individual movies are made, screened, copied, posted and seen all the time. As an example: Nigeria's emergent film

⁶⁷ A viral post sent via Facebook status updates, starting on June 19/09

⁶⁸ Hoolboom, Mike "Introduction", *Practical Dreamers: Conversations with Movie Artists*. Toronto: Coach House Books, 2008; p 5.

industry - i.e. "Nollywood" - has become "the second largest film industry on the planet, in terms of number of films produced per year"⁶⁹, due to the flexibility and affordability of digital video. Like digital media forms, individual and collective resistance to the neoliberal status quo exist everywhere and everyplace. Despite the ahistoric, afuturistic nature of these times, we, as a people, do know that there is a limit – that there is always, and everywhere, a limit. Agger writes

The problem with capitalism, now as before, is that its logic is utterly colonizing, refusing limit. But, as Heidegger recognized, our time is limited, and people naturally resist and refuse overscheduled, sleep-deprived, anxiety-ridden existence as symptoms of what Adorno called damaged life. People escape, resist, shut down; for them – us – time becomes political. We simply don't have enough time, affect, money (always money) to soak up the commodities they and their mechanical prostheses ceaselessly produce. We require sleep; we need to unplug. For capital not to recognize this, nor resolve it, is the real limit to capital.⁷⁰

And it is also, mais oui, about time. Time and space. While the chronometer of digital media may be a locationless tone - the clicks of the prior age having become so accelerated as to render the space in-between both inaudible and invisible - we need to remember our physics: every action brings an equal and opposite reaction. Within the rapid, expansive and overwhelming proliferation of digital media - and with it, the extension of neoliberal, global capital - lies the tools of its own demise: we ourselves can use its networks, flows, and shifts against itself; we ourselves can impose a limit, a break, a time and a space.

⁶⁹ http://en.wikipedia.org/wiki/Cinema_of_Nigeria

⁷⁰ Agger, p 233

Epilogue: Dreamtime Jetztzeit

This paper was accompanied by a public screening of my MFA project that took place at VIVO Studios in Vancouver, on July 20th 2009; now titled *Dreamtime Jetztzeit*. The title refers both to the Australian Aboriginal concept of "dreamtime" and Benjamin's concept of "now+time" as a moment without history⁷¹. For some Australian Aboriginals, "dreamtime" is both a cyclical understanding of time, as all three – past, present, *and* future - exist simultaneously, as well as a spiritual and ethical map outlining the proper way to treat each other, the ancestors, the spirits, and country. The title therefore links two different, but overlapping, conceptions of time, which in turn reflects my own overlapped influences and experiences as a mixed race and transgendered person, artist and activist. The basic parameter of this piece is a double projected work, with the two frames adjacent to one another. The left projected frame portrays a constant image of time lapsed digital video footage of my bed, in which I can be seen sleeping for shorter and shorter periods of time. The right projected frame alternates between time lapsed, digital video of myself working on a computer - when the bed on the left was empty - and projected super 8mm footage when the bed is occupied and I am visibly sleeping. The film/video screening is a performance, in that I myself operate the super 8mm projector; timing the increasingly briefer sleep/dream periods with audible on/off clunks of the film projector. After the final sleep/dream/film cycle, the super 8mm projector remains on, as a white, ghostly, but ultimately empty projection onto a time lapsed projection of myself on the

⁷¹ Ester, Leslie *Walter Benjamin: Overpowering Conformism*. London: Pluto, 2000; p 198.

computer that is repeated and then progressively sped up. Both digital images - of the empty bed, and the "full" computer desk - then fade out, and the final image and sound is the white, flickering projected frame of the super 8mm projector, which finally - audibly - turns off.

In the paper, I set out four specific aspects of the dream timescape that are shared with the mainstream film timescape: 1) the narrative structure; 2) the associated affective, "base" emotional state; 3) the lack of conscious control; and 4) temporal and spatial limitation. I also argued that these four facets, taken together, represented the most significant similarities between dreams and films, as well as the most significant differences between the act of watching a mainstream film versus the act of engaging with mainstream digital media. For the project, these categorized differences were emphasized in some instances and disrupted in others. The overall piece has a somewhat narrative structure, in that the cycles between sleep/dream and computer work are manipulated towards a climax wherein the former ceases to occur at all and the latter is accelerated and repeated. The digital imagery does reflect and refer to its more usual mainstream, non-narrative manifestations - YouTube, surveillance, etc - and the film imagery does end up appearing very dreamlike (albeit not in an immersive, mainstream narrative film way). In terms of the emotional impact of the piece, I was aiming for an increasing sense of claustrophobia, isolation and disconnect through the piece via the timing and content of the digital imagery, which shows small, constrained and visually bland sleeping and working areas.

This claustrophobic and monotonous aesthetic is intended to encourage a longing for the brief respites of film/dream imagery, which depict brief moments of colour, human activity and interaction, and vistas of the natural world. The piece references the third film/dream category I raise in the paper - the "lack of conscious control" - in that although I am using the expanded cinema format, by retaining directorial control I infer a cinema-esque experience. As a performance directed by myself as the artist, the piece carries a similar sense of "lack of control" for the audience; their only real option is to leave the space, and the timing and direction of the work is in the artist's hands. The fourth film/dream category from the paper is also reflected in the piece due to its performative aspect: as a performance, the piece is temporally and spatially limited; it has a specific duration, a start and stop point⁷². While the categories that I raised in the paper are reflected in the project, the piece is, overall, a non-narrative, non-immersive work that - as a totality - shares far more similarities with experimental film and video practices than it does with the mainstream uses of each medium.

There is a question raised by the paper that is answered by the film/video hybrid project that accompanies it. While the paper sets up analog/film and digital/video as a binary from the outset - and explores each form from this framework - the project presentation suggests a point of return for each form to come together again. As a performance, the project references both the history of activist and/or identity-based video practices *and* the history of experimental film and expanded

⁷² Interestingly, this reading only "works" when the piece is presented as an analog/digital performance; when the film footage is transferred to digital, and the piece is shown as a digital work, many of these tensions and overlaps between analog and digital are lost.

cinema. The potentially problematic ephemerality of digital video is grounded through the analog projector, the tense projectionist in the room, and the sight/sound of this manual, human-scaled device. As an expanded cinema performance, this piece references the interventionist, countercultural media practices of film artists of the 1960's and 1970's, in that the film medium and its manner of projection is made visible, tangible, and fragile. The digital content references documentary, durational video art, and activist/marginalized video practice; practices that exist as examples of the potential of any form to be used against its hegemonic intents and origins. The film content - a mix of found family footage from the 1960's and 70's, and contemporary abstract and representational footage shot over the last year - illustrates how challenging it really is to wrest the meaning of a medium from its larger societal and cultural significations. While I arranged the footage according to dream-like and dream-inspired associations - visibly splicing long past imagery to "present" images along colour, shape or subject lines - the effect remains stubbornly nostalgic and somewhat sentimental. The film footage exists as beautiful, brief moments of human interactions and aesthetic views of the natural world, which, in the context of the project, offer a material respite from the relentless, bland and claustrophobic cycles of computer-based interactions and lessening sleep. In this, the project comes back to the binary I established at the outset of the project, of film versus video. While I am aware of the troubling dangers that exist in sentimentalizing any media form - and film, as a the form which best reflects the mechanical chemistry of industrial capital, is hardly an "innocent" form - I do

hold a certain fondness for film's analog materiality. I have a nostalgia-tainted appreciation for the way film looks, captures, and projects, and this fondness could not help but be reflected within the project as a whole.

Ultimately, however, it is the final frame of the film - the frozen image of a child reaching towards a sailboat - that I am caught with and in: a moment of longing towards a pre-digital *and* pre-analog space and time, before computers or machines, chemistry or bytes. A time and space entwined with our planet, a way of moving and being that is respectful of, and reliant upon, the weather, which is itself a result of the balances and imbalances between earth, sea and sky. This moment of reach also reflects my personal attachment to two very happy childhood years living aboard a sailboat, and travelling across the Pacific; the image is therefore both a public metaphor and a private ache. The final frame is a dreamtime space: a nostalgic past, a missed present and a longed for future; nostalgia, mal du siecle, and prophecy all at once. It represents both the desire to be done with the digital world (and its industrial precedent) and anxiety about what kind of apocalypse may underpin this return. Given that there is a limit - always, and everywhere, a limit - and given that the modern, Western way of life is simply unsustainable - socially, environmentally, or politically - what will the end of the digital age look like? If we are lucky, it will look like this moment of reach: towards a balanced, connected and humbler way of being in the world.

WORKS CITED

- Acland, Charles R. ed. *Residual Media*. Minneapolis: University of Minnesota Press, 2007.
- Agger, Ben "Time Robbers, Time Rebels: Limits to Fast Capital" in Robert Hassan and Ronald E. Purser, ed. *24/7: Time and Temporality in the Network Society*. Stanford: Stanford Business Books, 2007.
- Baylor, George W. "What Do We Really Know About Mendeleev's Dream of the Periodic Table? A Note on Dreams of Scientific Problem Solving" in *Dreaming: journal of the Association for the Study of Dreams*. New York: Human Sciences Press; Volume 11, Number 2, 2001.
- Belton, John "Looking Through Video: The Psychology of Film and Video" in Michael Renov and Erika Suderburg ed. *Resolutions: Contemporary Video Practices*. Minneapolis: University of Minnesota Press, 1996.
- Crang, Mike "Speed = Distance/Time" in Robert Hassan and Ronald E. Purser, ed. *24/7: Time and Temporality in the Network Society*. Stanford: Stanford Business Books, 2007.
- Donnerer, Josef., *The Chemical Languages of the Nervous System: History of Scientists and Substances*. New York: Karger, 2006.
- Ester, Leslie *Walter Benjamin: Overpowering Conformism*. London: Pluto, 2000.
- Frackowiak, Richard S. J. *Human Brain Function*. Amsterdam: Elsevier Academic Press, 2004.
- Freud, Sigmund; Brill, A. A. (Trans); "The dream-work", in *The Interpretation of Dreams*. New York: MacMillan Co., 1913.
- Goertzel, Ben *From Complexity to Creativity: Explorations in Evolutionary, Autopoietic, and Cognitive Dynamics*. New York: Plenum Press, 1997.
- Graham, Phil *Hypercapitalism: New Media, Language and Social Perceptions of Value*. New York: Peter Lang Publishing, Inc., 2006.

Hassan, Robert and Ronald E. Purser, ed. *24/7: Time and Temporality in the Network Society*. Stanford: Stanford Business Books, 2007.

Hawes, W. *An Essay upon idleness: or, Chusing to live without business*. London, 1707.

Henning, Michelle, "New Lamps for Old: Photography, Obsolescence, and Social Change" in Charles R. Acland ed. *Residual Media*. Minneapolis: University of Minnesota Press, 2007.

Hogarth, William "Industry and Idleness" 1747.

Hoolboom, Mike "Introduction", *Practical Dreamers: Conversations with Movie Artists*. Toronto: Coach House Books, 2008.

Jones, Stuart Blake et al. *Film into Video: A Guide to Merging the Technologies*. Boston: Focal Press, 2000.

Kripke DF, Garfinkel L, Wingard DL, Klauber MR, Marler MR. "Mortality associated with sleep duration and insomnia". *Archives of General Psychiatry* 2002; 59(2).

Lauderdale D, Knutson K, Yan L, et al. "Objectively measured sleep characteristics among early middle-aged adults: The CARDIA Study". *American Journal of Epidemiology* 2006;164(1).

Leccardi, Carmen "New Temporal Perspectives in the "High Speed Society", in Robert Hassan and Ronald E. Purser, ed. *24/7: Time and Temporality in the Network Society*. Stanford: Stanford Business Books, 2007.

Loy, David R. "CyberLack" in Robert Hassan and Ronald E. Purser, ed. *24/7: Time and Temporality in the Network Society*. Stanford: Stanford Business Books, 2007.

McGinn, Colin *The Power of Movies: How Screen and Mind Interact*. New York: Pantheon Books, 2005.

Murray, Timothy "The Crisis of Cinema in the Age of New World Memory: the Baroque Performance of King Lear" in Michael Temple and James S. Williams ed. *The Cinema Alone: Essays on the Work of Jean-Luc Godard 1985-2000*. eds. Michael Temple and James S. Williams. Amsterdam: Amsterdam University Press, 2000.

Neidich, Warren *Blow-up: Photography, Cinema and the Brain*. New York: D.A.P., 2003.

Pagel, J.F. *The Limits of Dream: A Scientific Exploration of the Mind/Brain Interface*. Oxford: Academic Press, 2008.

Parks, Lisa " Falling Apart: Electronics Global Media Economy" in Charles R. Acland ed. *Residual Media*. Minneapolis: University of Minnesota Press, 2007.

Pronovost, Gilles "Le temps dans tous ses états: temps de travail, temps de loisir et temps pour la famille à l'aube du XXIe siècle", Policy Matters: Family Policy, (Montreal: Institute for Research in Public Policy), 2007.

Shelley, Mary Wollstonecraft "Introduction", *Frankenstein*. London: Penguin, 2003.

Sterne, Jonathan "Out With The Trash: On the Future of New Media" in Charles R. Acland ed. *Residual Media*. Minneapolis: University of Minnesota Press, 2007.

Thorburn, David and Henry Jenkins, ed., *Rethinking Media Change: The Aesthetics of Transition*. Cambridge: The MIT Press, 2003.