

Un-Earths: Landscape, Memory & the Global Map Lawrence Bird

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Abstract

This paper addresses the failures of the modern mapping project understood through three creative works in video and projection-mapping, discussing them in terms drawn from Bernard Stiegler's writing on industrialized memory. The three works harvest moving satellite images associated with significant geopolitical frame-works: the 49th Parallel, the Greenwich Prime Meridian, and Canada's Dominion Land Survey, exposing anomalies and opacities in imagery gathered there. One of these videos, *parallel*, is being screened at ISEA 2017. The paper articulates these works as amplifications of the failure of the modern project to transparently map the world. Rather, such frameworks -- in both their historical forms and their contemporary manifestations in GPS, GLONASS, the International Earth Rotation and Reference Systems, and popular tools such as Google Earth -- are rife with anomalies and errors. Counterintuitively, such failures are built into the industrialization of knowledge; as Stiegler puts it, the straight line generates the bent. This is even more the case as the mapping project becomes a temporal archive.

Keywords

Mapping, Video, Projection Mapping, Epistemology, Stiegler, Borders, Parallel, Latitude, Longitude, Meridia

Introduction

This paper is spurred by a perplexing question: why is it that, at the end of three centuries of attempts to perfectly map the globe, are we not yet in possession of that map? Why does this modern promise remain unfulfilled?

We might well look at this failure as hopeful evidence that in the end our lives as citizens and our work as creators can-not be circumscribed. I will make my argument on two fronts. The first of these is a set of creative projects in video and video projection mapping. The three projects are my own; I beg the reader's indulgence for this. The projects employ imagery harvested from popular Geographic Information Systems (GIS), specifically Google Earth. These popular systems are at first glance instances of the promised global map:

probably its most widespread and accessible form today. As any of us who have used them know, their navigation functions not infrequently drive us into error. But more than this, they are built upon some of the most sophisticated mapping technologies available: imbricated with the military technologies and agendas which constitute an inescapable political dimension of this phenomenon. They are in fact representatives *par excellence* of the technological, epistemological, and political project which is the modern map in its current manifestation. Numerous other artists have used tools like Google Earth to represent damaged modern spaces; for example Mishka Henner, Jon Rafman, and Doug Rickard. Projects by artists like these make critical use of the images offered to us by popular GIS. The ostensibly neutral, accurate and dispassionate infrastructure which gathers such images is revealed by the artists as in fact broken, shot through with anomalies and ruptures, and offering an unexpected poetics.

The three projects I will discuss involve screencaptured video from Google Earth: *parallel*, which tracks the 49th parallel of latitude where it coincides with the international border between Canada and the USA (screened in various iterations since 2012, in 2016 at Inter/Access Gallery, Toronto, and *Coder et Décoder la Frontière à l'Aube du 21ème siècle*, Université Libre de Bruxelles, and most recently at ISEA 2017); *Transect*, which follows the Greenwich Prime Meridian and Antemeridian around the world (installed at Queen Anne Court of Greenwich Naval College, United Kingdom, as part of the conference *Digital Research in the Humanities and Arts 2014*); and *Dominion*, a project currently in development, which will chart the Western Canadian territories and the 19th century Dominion Land Survey. Each of these takes as a starting point the grid of latitude and longitude, the basic framework that carve ups the world for modern knowledge, control and consumption. The moving images in these videos

amplify the many digital flaws and anomalies in popular mapping systems, as well as the physical scars and distortions in the landscapes they document -- features often generated by our own attempts to map and manage those landscapes. The projects intend a close and patient study of our modern manipulation of geography and image, while revealing something of the surprising potential for poetics therein.

That will be my first piece of evidence. My second will be theoretical, and will draw on Bernard Stiegler's writing on industrialized mnemonic systems. In his masterful work *Technics and Time 2* Stiegler makes the case that, far from establishing a perfect and absolute memory, modern technological systems by their very nature generate a condition of *différance* (Stiegler, 2009). In Stiegler's terms, Google Earth would be an example of such an industrialized mnemonic system. It offers not just a spatial but also a temporal map of the world's form, albeit a very young one; it is not only a database of places but also an archive.

In his earlier work *Technics and Time 1*, Stiegler makes the case that technics have always been constitutive of our humanity (Stiegler 1998). We become human through our manipulation of tools and technical devices, not despite it. And error is foundational to that use: while technics compensate for our shortcomings, our creation of technics (the prescient Prometheus illustrates that capacity) is the twin of our insufficiency (which is represented by the Titan's forgetful brother Epimetheus).

Stiegler is my theoretical lens for this paper, but I should briefly place my claims in relation to the observations of several other writers on knowledge (and maps). GIS might be seen at first glance as a manifestation of Borges' map, the model which came to rival the Empire that it represented (Borges, 1999); and its more seductive variants as perhaps resonant with Baudrillard's simulacrum, the episteme which succeeded the modern mirror of science and came to not just rival but replace the thing it modelled (Baudrillard, 1994). Resonances to the latter might seem most obvious, but as shall become apparent, the phenomena I will be describing exist in the end only in relation to materiality, not in its replacement. For thinkers like Casey (1997), Malpas (1999) and Pérez-Gómez (2016), GIS would be seen as an important contribution to the modern changes whose spatial impact has been the annihilation of place. Of course they are, but my assertions about the results are perhaps less pessimistic. I am presenting

evidence that what comes out of these systems and their interplay with the physical world is a place complicated and damaged by our modern condition -- but a place nevertheless. While such systems can in significant ways contribute to the impoverishment and evacuation of the meaning of space, my point is that their products also somehow, in strange ways and perhaps unintentionally, seem to enrich the world they represent. I will assert that such places, and our imagination of them, add to an existing material reality as Paul Ricoeur asserted fiction adds to reality (Ricoeur, 1984). They do this not in the generally accepted sense of "augmented reality", a layer added on top of an image of an existing world. Rather, in them material and image, landscape and its representation, intermingle. Stiegler's work itself seems to me resonant here: in a technological world, it is only through acceptance of technics as constituent of our humanity that we might find a way forward, indeed that we might recognize technology as what it is, our "saving danger" (Heidegger, 1977).

Parallel

The first project I will consider takes as its point of departure the 49th degree of latitude, the border between the US and Canada. *parallel* is an evolving single channel video which originated in 2012 and has since been through several iterations, each incorporating more recent and higher-resolution imagery.



Figure1. Courtesy Google Earth, ©2016 Digital Globe

Using functions internal to Google Earth (especially *historical imagery*), the project harvests satellite imagery captured along the length of the border as multiple sequential high -resolution images, collected, sorted, and edited into a single long aerial tracking shot from west to east, 7 hours in duration. Audio in this piece

comprised three superimposed tracks: found music, ambient sound from the International Space Station, and audio from an MQ-9 Reaper drone (these drones patrol the border today), all modified.

parallel runs 2,000 km from the Strait of Georgia in the Pacific Ocean to Lake of the Woods. If one follows the long pan long enough, anomalies become apparent, both in the landscape and its image. In Fig. 1, where the parallel approaches Lake of the Woods, the landscape and its image present a rich tapestry, in which the border itself has an ambiguous presence. Running vertically in the centre of the image (the pan moves slowly upwards), we can identify the line of latitude only through differences in land use: forest and wetlands have been cut away to create farmland, but only on one side of the border. Even on the farmed (American) side, distinct territories of land ownership and occupation can be identified; like the border, these are created by arbitrary lines of ownership. As the border approaches the edge of Lake of the Woods, it dissipates; all permutations of land use give way to a shoreline ecosystem.

This amalgam of land is further complicated by another phenomenon. Google's machinery has spliced together satellite tiles collected at two different times; the border between them parallels but does not equate with the political border -- there is a displacement of some hundred metres. The result -- a cloud cut as though by a knife, and the sharp edge of a dark and shadowy territory bordering the bright lakeshore -- suggest distinct and contradictory realities coinciding in one space. What would happen, we might wonder, if we were to follow that curving road from the bright land into the dark one? This single image, one of many thousands that might be harvested from *parallel*, presents a complex ecology of image, material, nature, artifice, space and time; an ecology that provokes narrative.

If in this hybrid world a digital artifact begins to take on the qualities of a territory, this condition can be even more pronounced. In Fig. 2, the 49th parallel can be identified in the faint line running down the centre of the image. Just to the right another, blurred, border is apparent where two satellite tiles (each captured at a different time of year, and collaged by Google's image processing system) meet and feather into each other. The image to the right was taken in the summer of 2005, when the Antler River overflowed its banks in one of the prairies' periodic floods; the one on the left dates from 2003. These two landscapes represent two

distinct but related prairie geographies, one terrestrial, the other aqueous; one controlled by human artifice -- engineering works can be identified clearly along the river bank -- and one escaping that control utterly. So the image speaks of the natural cycles of the prairie and our inability to control them. But another phenomenon is apparent: an inundation of another order encroaches on the image from the far left. Google Earth's algorithms have spliced a satellite image from an earlier time into this one, a lower-resolution image distorted through the machinery of Google's image processing. As we look closely into this pixelated and artefacted swath, it begins to adopt its own qualities of darkness, light, opacity and texture. It becomes a landscape in its own right. There are many other instances like this along the entire length of *parallel*, and they are often provoked as is this one by the temporal nature of Google Earth's map. Google Earth is not just a database of current satellite tiles. It is also an archive of historical images of the Earth dating back to the 1990s. Images like these reveal the unevenness of the data acquired and integrated into the archive at different times. Gathering images from the early 2000s for example, there is an obvious asymmetry between the imagery on the American side of the border—highly defined—and the Canadian side—highly pixelated, if present at all. But the temporality of this phenomenon seems integral to even the most recently collected imagery. Satellite images are not captured simultaneously. They are gathered by a space-based camera moving along a path above the surface of the Earth, and are recorded in sequence before being recomposed as tiles into one composition of the world. The border between two satellite tiles thus represents a seam in time rather than merely space. Different moments in one day are juxtaposed between separate images. Different seasons coexist.

This strange splicing of times, responsible for the generation of new and contradictory landscapes where we might have expected to see a straightforward, uncomplicated representation of a physical reality, seems characteristic of contemporary conditions of media, and it is Stiegler who will help me understand this. But for now I would like to point out that this strange, occasionally eerie, contemporary condition follows a long history of mistakes made with earlier technologies. The 49th parallel was always an arbitrary boundary. The border was originally defined through a series of negotiations between the United States and the United

Kingdom following the Louisiana Purchase of 1808. In principle it was defined as the watershed between the Missouri/Mississippi river basins and Hudson Bay. But that line was in practical terms impossible to find, just as impossible conceptually, given the geometries understood at the time. Hence it was substituted by the 49th parallel; but even that simplified border could not be pinned down. It was laid out in several land surveys culminating in the 1880s, and cumulative surveying errors led to the border monuments straying hundreds of feet from the 49th degree of latitude. Subsequent treaties have defined the border not as the parallel itself, but as the wavering line demarcated by these (inaccurate) monuments. In the evolving iterations of the video work *parallel*, the path of the camera kinks imperceptibly to more precisely follow the original surveying errors which define today's political border. As it does, it records a land-scape whose technological mapping was compromised from the beginning.



Figure 2. Courtesy Google Earth, NASA, USDA Farm Service Agency

Transect

Such are the disruptions introduced into the simple and precise demarcation of the Earth one might hope for from a single line of latitude. Yet, it gets more complicated. At the time the 49th parallel was being surveyed, European powers were gathering to standardize the different systems of latitude and longitude used in their scientific and colonizing projects, around a common or Prime Meridian.

Pinning down latitude and longitude had always been a challenge. Latitude defines one's position along the circumference of the Earth at a given angle from the equator, and is easily calculated trigonometrically based

on the elevation of the sun above the horizon at noon. As one moves north the highest elevation of the sun in the sky (on a given date) decreases. Longitude, the distance in degrees of the earth's circumference west or east from a given reference line, is not so easily measured. In the 2nd century Hipparchus (who first devised this system) proposed to measure longitude by comparing local time to a place with an absolute time: a prime or zero meridian passing through Rhodes. By knowing the precise time at the zero meridian, even when one was at great distance from it, and knowing the movements of the sun and stars through time, in principle it became possible to measure, from their locations in the sky, one's location on Earth east or west of the Prime Meridian.

But knowing the time back at the zero meridian depended on access to a clock which accurately kept that time even when moved from the point of reference. And such a clock would not be developed for centuries. At the end of the 16th c CE Galileo proposed that the movement of the moons of Jupiter could serve as such a clock, and in the second half of the 17th c Cassini was able to use it to plot the latitude of the island of Goree in the West Indies relative to Paris. The Royal Observatory in Greenwich, England, was built to allow observations of the stars and moon precise enough to allow the Earth's own moon to be used as such a clock. The problem of time was thus in principle solved for land measurements, but there still remained the problem of achieving the necessarily accurate measurements from the moving deck of a ship at sea. By the middle of the 19th century, methods to measure time (and thus longitude) had been developed based on increasingly reliable timepieces.

Yet even as time became standardized, the choice of which line running north-south along the Earth's surface should be taken as the base line from which time and distance were measured -- the zero or prime meridia -- continued to be disputed. Prior to 1884 any European power with scientific or political ambitions had its own Prime Meridian. In that year the International Meridian Conference standardized the global system of latitude and longitude based on Greenwich's Prime Meridian. While France held out, employing a Paris meridian until 1911, the matter was otherwise settled: the epistemological, technical, and political division of the world in space and time had been universalized around a single reference line. Yet even as the capacity to precisely delineate such instrumental frameworks was becoming

stronger and stronger as we moved forward into the 20th century, their arbitrariness, ultimate indeterminacy, and resistance to control became, counterintuitively, more and more pronounced. This is the subject of the next piece I will discuss, *Transect*.

Like *parallel*, *Transect* pursues its path along a single reference line, the Prime Meridian (zero degrees of longitude) running through Greenwich, England, and its analog the Antimeridian on the opposite side of the world (180 degrees of longitude). These two lines form a great circle, a single long transect of the planet. Traversing this transect, so important to the European -- or Anglo-Saxon -- division of the world, the video project isolated many of the same phenomena identified by *parallel*. In Fig. 3 for example we can see an arbitrary line dividing the city of Tema, Ghana, invisible on the ground but apparent (displaced approximately one minute of longitude west of the Prime Meridian itself) in the line bisecting a cloud, where images from two times are spliced together. As did the earlier images, this one too folds the passage of time into its representation of space - a space itself bearing the marks of different times. The meridian crosses a complex polity incorporating a military installation and former detention centre Michel Camp, adjacent informal settlements, and the roadways and highway cutting the camp off from its surroundings. This landscape is a contemporary product of European manipulation of African political space, manipulation which made use of arbitrary geospatial lines, ignoring existing national identities and local definitions of place, to dissect the continent in ways that worked for Europe. *Transect* traversed many such spaces as it followed the Prime and Antimeridians around the planet.



Figure 3. Courtesy Google Earth, ©2016 Digital Globe

While *Transect*, like *parallel*, was single-channel video composed of thousands of high-resolution sequential stills, in this case the images formed the basis of a projection mapping project. As already mentioned, Greenwich Royal Observatory was the building created to perfect astronomical observations for the accurate navigation of the Earth by the nascent British Empire. Several of Britain's Prime Meridia have run through this building, culminating in the Airy Meridian established in 1851 and adopted as the International Meridian in 1884. The Royal Observatory sits atop a hill above the Greenwich Royal Naval College (1696-1712). This complex was designed by Sir Christopher Wren (architect but also an astronomer himself), with Nicholas Hawks-moor. The College and Observatory together were arguably the most significant building complex dedicated to global mapping and navigation at that time. On two nights in the summer of 2014 *Transect* was projected onto a courtyard portico of Queen Anne Court of the Royal Naval College.

The videos captured from Prime and Anti-meridia were superimposed, sampled, and projection-mapped onto the portico (Fig. 4). On the first night, moving images from along the Prime Meridian were mapped onto the portico's pilasters, and those from the Antemeridian onto the interstitial wall. On the subsequent evening these roles were reversed. These projections effectively collapsed the two sides of the planet onto each other, amalgamating their image with the architecture from which the Prime Meridian originally emanated. As real and fictional landscapes flowed past each other over time, repetitive yet ever-changing, they became a patina for the 18th century architecture: a liquid patina in which image and material mingled.

Today the arbitrariness and indeterminacy inherent in the choice of any Prime Meridian have been exacerbated by the shifting of the Greenwich Meridian 5.3 arcseconds (at Greenwich, this amounts to approximately 102m) eastward to form today's International Reference Meridian (IRM). The IRM is maintained by the International Earth Rotation and Reference Systems Service; it forms the basis of the Global Positioning System operated by the United States Department of Defense, and widely used for civilian navigation systems. Yet if this meridian was ever considered fixed relative to the Earth's surface, a certain and definitive base-line, it is no longer: we now know that the planet's tectonic plates move ceaselessly under it. The IRM is today instead space-based, defined as the weighted average of hundreds of reference meridia running through Earth-based stations and communicated through two dozen Global Positioning Satellites. Derived from this system, the network of latitude and longitude is now mobile, having no fixed relation to any point on Earth, nor to the reality of political borders. It is today charted not by just one GPS network but by two, the second being the Russian GLONASS system which feeds into a growing number of cell phone navigation systems.



Figure 4. Image courtesy of the author

The IRM and GPS frameworks, and their precise yet ambiguous delineations, are the frames of reference by which Google Earth's machinery composites captured satellite imagery. If *Transect* brought that imagery back to the places where these reference systems originated, Royal Greenwich Observatory and the Royal Naval College, it is appropriate that its appearance there was fluid and temporary.

Disorientation & Time

Before I turn to the final video project, I would like to revise some of these observations through the lens of Bernard Stiegler's writing on technology.

Stiegler's key thesis in the re-reading of Martin Heidegger through technology which is his series of books *Technics and Time*, is that the technical is and always has been constitutive of our humanity: of our human movement through life, through time. We humans have always been incomplete, and have always striven to complete ourselves through prosthetic devices: tools, weapons, instruments of artifice and art. Prosthetic objects, and prosthetic devices, form a technical support for our individual becoming, and our becoming as a species. And as I have already mentioned, failure and error are inherent in this condition. As Stiegler puts it, in completing ourselves through technics we are caught up in an *Epimethean complex*. This term refers to the forgetfulness of Epimetheus, for which the work of his brother Prometheus – his imagination, his anticipation of the future, and his inauguration of technical and technological projects – compensated. For Stiegler, while Prometheus's successes represent our fulfilment, in fact are our only path through to our becoming, Epimetheus's failure represents humanity's failure; the Epimethean condition means our success is never unalloyed (Stiegler, 1998). Our attempts to map the world in the modern era are exemplary of this dual condition of success and failure.

In the second volume of *Technics and Time*, subtitled *Disorientation*, Stiegler develops ideas on the implications of the Epimethean complex in current conditions of media. He develops his argument primarily in response to the writing of Derrida and Husserl. The prosthetic processes of which he speaks include the recording of history: our memories are insufficient, and to complete them we have employed an array of mnemonic tools since time immemorial, or rather since time *memorial*. There is no original or originary time, no pure experience or memory; we access history, and experience after the fact, only through prosthetic forms of recording. These constitute our humanity. Stiegler understands industrialized media in the context of a long evolution of technical frameworks supporting memory, whose first substantial manifestation was orthographic writing.

In *Disorientation* Stiegler's underlying preoccupation is the relationship between orthography (whether in text or image) and *différance* – the term Derrida used to

refer to written language's failure to pin down meaning, eternally deferred as it slips elusively between differing definitions. Meaning is inherently unstable. A common assumption in our time might be that contemporary conditions of media imply the occlusion of *différance*. Ostensibly based on a positivist epistemology, the very notion of "Information Technology" implies the flattening or reduction of all knowledge to information, the elimination of the gap or delay between sign and thing within which meaning can remain ambiguous or multivalent. The immense scope and scale of today's mnemotechnological systems, their reduction of information's value to capital, and the prevalence of instantaneity and speed in the transmission of data result, for many, in the denaturing of knowledge and writing; that is, its erasure of *différance*.

Disorientation argues that the opposite is true. Stiegler makes the case that the human experience of time and being, in all its ambiguity and indeterminacy, is generated paradoxically out of our attempts to record and communicate with precision, orthographically, with no gap. He embarks on an analysis of our foundational engagement with memory and technology, addressing his subject with reference to the image and to text to demonstrate its production of *différance*. Drawing for example on Barthes' writing on photography, he emphasizes that the photographic image has built into it delays: between opening and closing of the shutter, between exposure and development. As he puts it,

'the photograph contains an objective melancholy binding time and technique together; yet throughout the entire history of visuality, time and technique have been constituted solely through the refraction of their instrumental and technical surfaces: *différance* as a single movement of spacing and temporalization.' (Stiegler, 2009, p. 18).

Through Lacan he demonstrates the more general significance of the image, making the case that a preoccupation with the image (*imago*) derives from the mirror stage of human development. The mirror stage is 'a particular case of the function of the *imago*, which is to establish a relationship between the organism and its reality... altered in humanity by a certain dishesion within the organism itself, but a primordial Discord... The *mirror stage* is a drama whose advent is precipitated by an insufficiency of anticipation – and which for the subject, caught in the lure of spatial identification, fabricates the phantoms that are succeeded by a

fragmented image of the body into a form we call orthopedic of the totality.' (Lacan, cited in Stiegler 2009, p. 26-27)

Our attempts to reflect the world – to record and mark it orthographically – have incoherence and fragmentation built into them. In other words, the lag between the Epimethean and Promethean movements, inherent in our imagination, production, and use of technics, is what generates *différance*. Text, no less than any other expression of the orthographic tendency, produces such gaps and ruptures. And as these two illustrations underline, this is no less true in the case of the orthographic *image*. The industrialized map of the world is perhaps the most significant example of such an attempt at orthographic imaging; and as I have tried to show, it is a generator of *différance*, *par excellence*.

As he develops his argument, Stiegler tackles the long-standing bias within phenomenology against the technical. Following Derrida and Paul Ricoeur, he discredits Husserl's understanding of primary, secondary, and tertiary memories. These refer to degrees of separation from direct experience: from our retention of immediate experience, to its recollection, to its recording and recollection through reference to (orthographic) documentation. For Husserl's phenomenology these are all pale shadows of direct experience, and usurpers of its value. But for Stiegler, they are integral to it; the intimacy of direct experience is inseparable from its record, even as it pulls away from it:

'primary memory [retention, production] can no longer be any more opposed to tertiary memory than to secondary memory [recollection, re-production]: the already- there *qua* what, the third world- historial, is constitutive of a temporality always already emerging from its strict intimacy.' (Stiegler 2009, p. 199-200)

Stiegler thus validates not only textual memory, but also all forms of record- keeping. Indeed, if memory is always about memory *loss*, about forgetting as much as it is about remembering (the Epimethean complex), tertiary memory is even more integral to our Being than is the original experience: it represents our recovery from loss. (Stiegler, 2009, p. 222). In terms of Stiegler's larger thesis, tertiary memory – memory supported by a technical framework – is a key instance of the prosthetic processes through which we become fully human, always in relationship with time. The moment passes, we record our memory of it, we recall it through that record(s); a never- ending loop of forgetfulness

and recollection constitutes us. Imaging systems, to the extent that they become not just databases but also archives engaging time and memory, invest us in and are themselves invested in this loop.

For Stiegler the simple act of archiving, of recording history, builds delay (which is at the root of *différance*) into our relationship to the world. Delay is not erased by industrialized memory, but constitutes it. We might sense this in our own experiences with technology failing at its limit of speed and capacity and its impact on our perception: communication feeds breaking down, images and audio fragmenting into noise, from which we might seek to piece together or invent an elusive, indeterminate meaning. It seems as though the closer we get to the instantaneous communication of information, the more turbulence we produce, the more disruptions, delays and deferrals emerge. As Stiegler puts it, referring to our attempts to annihilate space through “real-time” communications, in fact ‘Real time is a derealization of time, as if time were really real only in remaining unreal, chronically diachronic, asynchronized, late for itself’ (Stiegler 2009, 124).

Stiegler identifies a specific kind of object native to this media space: the *temporal object*. These are objects generated out of montages of memory, currentness, and “real time”, which mark and bear traces of the passage of time, and are entwined with it in a complex relationship which even allows them to add to history:

‘A combination of new texts/data and instruments make an entirely new mobilization of the *already-there* [the historical] conceivable. Citation and arrangement of the various elements furnished by available patrimonial and informational sources open the possibility of a qualitative leap from a new reading and writing at ‘light-time’ laminated onto an other, deferred time.’ (Stiegler, 2009, p. 148)

Furthermore Stiegler asserts that temporal objects tend to ward a specific form of expression:

‘(The) secondary memory in which the past can be recomposed... enacts as image-consciousness, strictly speaking, namely, by its transcendent representations such as icons, drawings, photographs, tracings of all sorts...’ (Stiegler, 2009, p. 221)

That is, they tend toward the visual, and the spatial. We might well see the works and tools I am discussing as instances of Stiegler’s temporal object: images laminated, composited, juxtaposed, overlaid, rubbing up against each other and generating thereby a friction

from which a space of ambiguity and deferred meaning might arise. Despite the aspiration to unite the entire surface of the world under one intuitive navigational scheme, labelled with a coherent and universal system of symbols and markers, in Google Earth as in other platforms a plethora of information, cross-referencing and inputs (often user-generated) provoke a condition of heterogeneity, uneven unequal spaces, but also times: hours, days and years laminated onto each other.

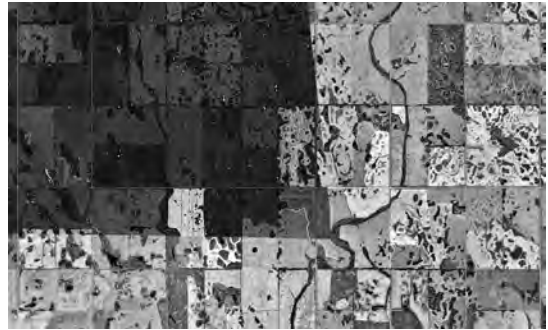


Figure 5. Courtesy Google Earth, NASA, ©2016 Digital Globe Dominion

Dominion

There are several points to reiterate here. First, our creation of the orthographic image itself generates *différance*. The straight line generates the bent, the attempt to determine provokes the indeterminate. Second, photography is a specific instance of this. Third, orthography today manifests in industrialized knowledge bases and most importantly mnemonic systems. Geographic Information Systems are of course a form of industrialized orthography. They can also be mnemonic systems: Google Earth is one example of a spatial database which is also an archive. And it integrates, profoundly, the image or images of the world, images in which *différance* and delay are not only not *erased* by industrialized memory: they are actually *provoked* by it. The images display both the past, and various forms of future: lines laid out on the landscape over a century ago in anticipation of development to come, lines which failed at their inception and periodically fail again before the changes of seasons and the passage of time, lines laid out in anticipation of settlements of tomorrow; lines which must be redrawn again and yet again. Embodying the Epimethean complex, these lines project forward the imagination of a world united in and managed by one vision at the same moment that they look back at what we missed.

There are implications in this for the entire project of human mastery of the planet, and that is the focus of the third video project I will touch on, *Dominion*. The project addresses the Dominion Land Survey (DLS), the 19th century project which divided the Western Canadian prairies into the grid of perhaps one million one-mile squares we still see today. The DLS has its own Prime Meridian, just west of Winnipeg, Manitoba. The survey's title refers to the Dominion of Canada, the British term for that territory; but of course it refers also to human, modern, and western projects to dominate the planet. *Dominion* intends to disrupt such projects.

The DLS, like all other mapping projects, is rife with anomalies. These are technical (due to the limitations of mapping technologies then and now), ecological (DLS-based land divisions are repeatedly undermined by the natural cycles of the prairies), and social (pre-existing patterns of land use -- aboriginal reserves, French river-lots, Métis settlements, and others -- survive as gaps in the grid). In other words, while the myth of the rational division of landsurvives in the prairie grid, it and its image are shot through with ruptures. A few of these can be identified in Fig. 5. Besides the mile-square sections of the DLS, we can identify numerous features which disrupt the grid, including the path of a river, seasonal sloughs and ponds, traces of larger-scale flooding, and the edges of satellite tiles composited from images at different times of the year.

We can easily recognize an affinity between the landscape depicted here, fragmented as it is by land use and ownership, and the images which represent it. It is no coincidence that the Google image of the North American prairie looks pixelated; it is a landscape reconstituted to serve processing by an industrial system, just as is the digital image. A native organic *thing* is cut up and turned into an assemblage of monocultural (or monochromatic) plots (or pixels), a process which would seem to impoverish it but for me, counterintuitively, enriches it.

The digital environment produced here reconstitutes the image of the human and technical landscape in the same terms that we have manipulated that landscape; this is a particular focus of *Dominion*. The project, which is now underway, will provide a critical visual meta-survey of the DLS grid and landscape, articulating the current state of the prairies, entangled in technologies old and new.

Conclusion

Stiegler's argument, and our use of these imaging systems, has implications for the contemporary subject. Our (growing) dependence on tools from organizations like Google is just one instance of how, in his terms, the *who* of the subject now extends out into the *what* of the technological matrix. Stiegler makes the case for a new subject, what he terms the *idiotext*, generated out of a process of *différentiation* provoked by that extension. The term suggests both the Greek sense of one without professional knowledge, illinformed, and also one in the paradoxical condition of being torn from context (idiosyncratic) and profoundly local (idiomatic). This subject's relationship to place is also a paradoxical one:

'The idiotext attempts to think place, the (re) constitution of place, and giving- place as such: the opening of a spatiality in the event's temporal having-place. This effort "has place" within the "context" of what I have characterized as decontextualization.' (Stiegler, 2009, p. 243)

If the image of the Earth is resonant with the torn up and reconstituted landscape, so are we. As we are renegotiated in new localities, through and within our supporting *whats*, we seem to be placed radically outside ourselves even as we take a place. The irony and contradiction in that condition is perhaps inescapable. We all take part in it; even our presence here at this conference is an example, as we all come from far away to discuss the significance of local territories and their relationship to media.



Figure 6. Courtesy Google Earth, © 2016 Digital Globe

We might elaborate slightly on an idea implied by Stiegler but explored in greater depth by another writer. That is the importance of stories. In *Time and Narrative* Ricoeur draws on St. Augustine to articulate how we

are torn apart by our impossible experience of time. (Ricoeur, 1984). In fact, Stiegler's deconstruction of the primary/secondary/tertiary memory distinction employs an analysis of the reading of poems which appears to intentionally recall St. Augustine's discussion of the memorization and recitation of song, employed in *Time and Narrative*. For Ricoeur, working from Aristotle, it is only narrative which sews together our being thus sundered. The intersection of database and archive expressed in these hybrid landscapes can be understood as a latent narrative in these terms, one which deterritorializes and reterritorializes space through a prosthetic both serving and failing memory.

In Fig. 6 we see again the product of two adjacent satellite tiles. The first, on the right, shows us a human settlement, two homesteads amidst fields plowed and marked by the hands and machinery of the farmer; a form of prosthetics proper to an earlier era. To its left is another field, a pixelated digital field generated by Google's Earth's processing of an older, lower-resolution image. In this second territory we can begin to identify a landscape belonging to the prosthetics of our own time, perhaps one to be inhabited by the *idiotext* of which Stiegler speaks. These two fields are linked by paths that might lead us between settlements, that make one field the umbilical source of the other. But which is which? If we cross the boundary from one these fields into the other, who will we find there? What might they become?

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