

**the material
turn and
interactive
documentary:
a panel**

Edited by Adrian Miles

the material turn and interactive documentary: a panel

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introduction



a blurb

Critical theory and philosophy across many fields in the humanities has become awash with what has been characterised as ‘the material turn’. This material turn, which seems to involve varying combinations of what is known as Object Orientated Ontology (Harman), Actor-Network Theory (Latour), process philosophy (Whitehead), speculative realism (Bryant), or agential realism (Barad), emphasises some move toward a posthuman understanding of what the world is, and our relation to it.

Some of these materialist theories seem to be adept for describing and analysing the relation of the social and cultural to the technological. It is in this spirit that many of these materialist theories are being appropriated by an emerging group of media scholars to rethink what media is, and does, from posthuman, technological, and ecological perspectives. In the case of interactive documentary this workshop wants to investigate how, or in what ways, this material turn might matter for how we

understand what interactive documentaries are, what they do, and what they might be for.

As Jane Bennett argues:

the constructivist response to the world also tends to obscure from view whatever thing-power there may be. There is thus something to be said for moments of methodological naivete, for the postponement of a genealogical critique of objects. (p. 17.)

In this spirit of methodological naivete this pamphlet has emerged from a panel at Visible Evidence XXIV, held in Buenos Aires in 2017. What follows consists of a series of propositions and interrogations of new epistemologies and ontologies for understanding interactive documentary through a materialist lens.

The format of the workshop was for each participant to have five minutes (and ten slides) to make key points or ask key questions as prompts for discussion, debate, and detailing amongst panellists and

audience.

Participants were invited to further develop their thinking in light of the panel. The work, as curated here, is deliberately between the tone of the presentation and a finished article. They are more formal than a panel, and shorter and less refined than an article. In this manner they are part of an ongoing experiment in alternative academic practices and forms that seek to open, critique, and revision scholarship as a black box.

YMMV.

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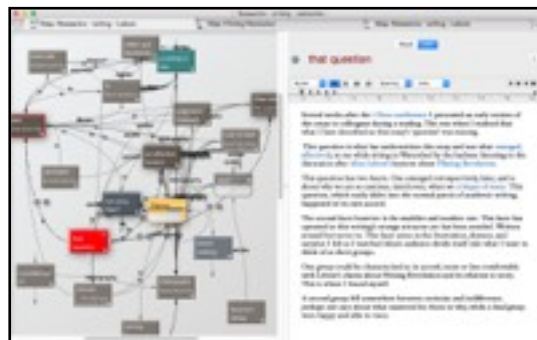
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Adrian Miles, Melbourne, November 2017.

Adrian Miles



a murmuration is not a story



Slide 1. Screenshot from Eastgate System's Storyspace hypertext software. Image: Adrian Miles

This brief essay looks backwards to go forwards.

I have worked inside of digital media for many years. In the early and mid 1990s this working inside largely involved hypertext. Hypertext, in spite of the hegemonic example of the World Wide Web, was originally a practice that obliged me to rethink my agency in relation to writing, as much as reading.

Figure One is a screenshot from a recent essay I wrote using the hypertext software Storyspace (a hypertext program I started using in 1993). Storyspace, unlike the web, regards links as objects. This means a link is a thing that has attributes (for example names, rules, conditions) and can also be multiple. A word or phrase, for instance, might have several different links, each going to a different node within the hypertext work. Here an idea can, and does, have multiple, simultaneous, immediate connections to other ideas. The lines you can see in Figure One are the links that I have made that, in this example, are from words and phrases in content nodes to other nodes.

Storyspace is a robust hypertext system where any phrase can have multiple links, and therefore multiple, simultaneous destinations. This makes writing and reading inside of Storyspace a qualitatively different experience to writing on a page, or even in a word processor. This difference is most evident in the way that the affordances of Storyspace allows for an open, multilinear, and non-teleological writing. It is all line and middle. Beginnings, and endings, become arbitrary, even accidental, rather than fixed and deliberate. This is a precursor for relational, materialist, interactive documentary.



Slide 2. Screenshot from Eastgate System's Storyspace hypertext software. Image: Adrian Miles

A Networked Practice

I characterise writing in Storyspace as writing hypertext, *hypertextually*. I also characterise it as an intimately postcinematic (not literary) practice (Miles 1999). This has taught me two very important things.

The first is that you must work *within* your media to know how to work *with* your media. This is, I think, obvious (though so often not translated into emerging medias where we seem, instead, to hang on to our older ways and translate these into the new). A writer knows that to write you need to write, and a musician that to compose you need to play music. However, historically this has been less obvious for cinema largely because its costs of production have been so high. So, for example, storyboarding and other systems emerged to minimise the financial risk of simply filming, in the way a writer would write and a composer composes. This, of course, is no longer the case (though it remains surprising how many students, and film makers, seem to preserve these practices of scarcity and are unwilling to just make films, of varying scales, wily nilly). The maintenance of these industrial practices are also common in interactive documentary.

In interactive documentary it is rare to find practitioners who make 'inside' of their medium. Much like traditional film making it is very common in interactive documentary to find architectures that are sketched outside of the work, using wireframes and the language of interaction and user experience design, even information architecture, to decide its 'shape'. Similarly, the film making or audio visual component of many interactive documentaries employs legacy practices where

the video is added to the work and, aside from perhaps a concern with editing sequences into readily digestible chunks, little specific attention or concern is paid to what the computer and network do as sites of practice. Here computers become tools to replicate legacy habits such as editing and postproduction, and networks are only places of publication and dissemination.

This might seem a long reach, yet what I learnt from writing hypertext in Storyspace is that when you write inside of your tools you learn how to listen to the affordances of your tools, including words, ideas, links, nodes, and relations. This is what Donald Schön has characterised as the “back-talk” of practice. The shape of the work then evolves between these affordances and this back talk, becoming an inevitably complex choreography between what you think you want to do, what you believe you are doing, what your stuff (words, video, sounds, and so on) does, and what your media machines can and, want, to do. Shape emerges from this assemblage, it is not imposed from outside, upon.

The second thing that I learned from writing hypertext hypertextually is that writing is, implicitly, a technology. Print literacy, the form of writing that is reified through the technologies of the page and book is like any other ideology as it appears natural and inevitable. In this it obscures alternatives. This now seems obvious, though at the time it really was quite a shock. (In the same way documentary has habituated and naturalised us and these are the habits we bring to interactive documentary.) The trick of ideology is that as we naturalise and internalise these affordances when we bring a

technology to hand we mistakenly believe we are the ones making all the decisions, and that our equipment is subsumed by our intent. In other words, the agency of our tools, and the practices they require, becomes obscured and normalised by our mistaken belief that we are largely in charge. This is one facet of what Quentin Meillassoux has labelled ‘correlationism’.

Internalising the affordances of the equipment, practices, and institutions of documentary naturalises them. This makes it very difficult to notice the differences that could matter when we come to interactive documentary as its *own* media. We misunderstand what has agency, and why, in interactive documentary, because we try to turn the affordances of its parts towards the conventions and form of documentary.

If hypertext is where I learned about the implicit agency, autonomy, and materiality of digital media, it was materialist philosophy that has given this implicit learning an explicit framework.



Slide 3. Quotes about new materialism.

Agency of the Bits

Materialist philosophy, and what is now characterised as ‘the material turn’, have provided the theoretical framework through which I understand and describe what I implicitly learnt from writing hypertext, hypertextually. It is this understanding, premised on surrendering to the agency of my technologies, that I now bring to interactive documentary.

All the parts of an interactive documentary have agency. What the parts of an interactive documentary are is I think a key problem for interactive documentary scholarship, and a task that is only just beginning. The list of parts is probably never ending but a preliminary list would include camera, lens, CCD, web browsers, bandwidth, codecs, coding languages, screen gamma, data rates, weather, technical media, microphones, hard drives, SSDs, servers, electricity, batteries, people, and algorithms.



Slide 4. Image of a starling murmuration. (Source: Marcos Campazas. "Magic Cloud." <https://vimeo.com/197048788> — labelled for noncommercial reuse.)

Murmuring Machines

Materialist philosophies describe the world as a complicated tangle of human and non human, sentient and non sentient things, all of which have agency. This agency is understood as the capacity of things to do.

Because things act all amongst themselves in a myriad of ways, quite apart from us, what results is characterised variously as a meshwork (Ingold), actor–network (Latour), entanglement (Barad), or even an assemblage (Deleuze and Guattari).

Often when I've described these sorts of entanglements in relation to the media forms that can accommodate them I have argued that narrative gets in the way. This is because narrative involves deliberate cause and effect chains of actions and is inherently teleological. Events happen in stories for reasons, and as any good narratologist can tell us, these reasons are, at the end of the day, to progress the narrative towards its inevitable and seemingly natural conclusion. (In the same way the substrates we have placed our stories upon — paper, film, and tape — also demand a beginning, some middle, and an end. Film, video, and books all have a first frame or page, and this indebtedness to these materially linear scaffolds means, by definition, there must be a last frame or page. They do begin and they do end. Our modern narratives have co–evolved with these industrial forms and have very comfortably accommodated themselves to them.)

At these moments of questioning the naturalness or primacy of story, generally in question and answer sessions, things unravel in often unruly ways. Someone, somewhere, wants to insist

on the primacy of story or narrative, in some manner, and I, inevitably, try to invent increasingly extreme cases or examples to demonstrate this as species bias and exceptionalism. To wit, the image of a starling murmuration in Figure xxx.

A murmuration sees complex patterns formed in space and time. These patterns, which for humans are thrillingly aesthetic and at times sublime, are autopoietic. There is no chief or auteurist starling that is directing (or authoring) activities, it is simply a mass of semi-autonomous agents that respond to a reasonably small set of constraints (how it happens has been modelled by curious physicists). From this small set of constraints complex patterns emerge.

A murmuration is not a story, nor a narrative. It is real. In spite of no direction it is elegant, complex, patterned and meaningful in innumerable ways to the birds, people, air, water, and even the CCD of a camera. I offer a murmuration as an example of nonhuman sentient complexity, and as a simple exemplar for what computational systems can also do. If we stop thinking the world has to be narrated to be understood or explained, if instead we used the example of a murmuration, what could our interactive documentaries become?



Slide 5. Collage that includes a screenshot from Bear 71 (<http://bear71.nfb.ca/#/bear71>) Image: Adrian Miles

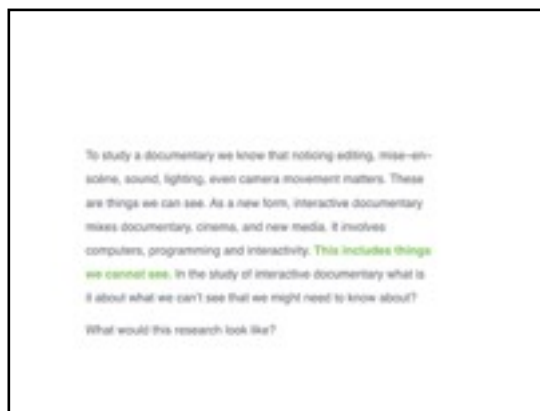
Coming to Matter

This pamphlet arises as one media trail from a panel on materialism and interactive documentary that was held at Visible Evidence XXIV, in Buenos Aires. We hope there will be more trails. The panel was curated around five minute presentations by each participant to set a series of questions, propositions, concerns, ideas, and criticisms. The hope was to create a temporary entangled milieu of concepts that would be less concerned with certainty, or the academic authority of well structured argument, than letting ideas have their ways with us. The entanglement did not really happen, an observation for another time.

However, when I argue that interactive documentary might not want to rely on stories and narratives then it can feel like there is an intellectual impasse about what then we should talk about in relation to interactive documentary. This impasse arises because story and narrative are our royal road to representation and meaning, and this, generally, is the stuff of our academic exchanges. What then, do we talk about when we want to talk about an interactive documentary?

One answer that I am proposing, which emerges from the intuition that materialist philosophy provides a significant methodology for interactive documentary, is to talk about what comes to matter for any interactive documentary. This 'coming to matter', which is indebted to Latour's idea of 'matters of concern' (Latour, pp. 87-120 passim), includes those things we think matter for interactive documentary in relation to what might be its story, truth claims, and work as nonfiction. But, as importantly, it also needs to include the deliberate

consideration of how an interactive documentary makes these *visible* things come to matter by what all its many other parts are doing, for it is in the agency of these other parts that an interactive documentary can be made to matter at all.



Slide 6. Things we cannot see.

An Interactive documentary's Other Parts

When we study a traditional documentary we know that editing, mise-en-scène, sound, lighting, even camera movement matters. These are all things that we can see. We know how to notice them in any documentary and how to make claims with, and about, them, in relation to what we take to be the point of any particular documentary. We know, for instance, that the long takes in a Wiseman film are making particular documentary claims by virtue of their duration, use of available light, and the intimate distances they enact.

On the other hand, as a new form, interactive documentary mixes documentary, cinema, and new media. It involves computers, programming and interactivity. This very much includes and relies upon the actions of things we cannot see. For example, in some interactive documentaries there are procedural algorithms that are fundamental to how the documentary works. They are as important to the interactive documentary as video or film is to Wiseman. However, unlike film and video in a Wiseman documentary (which is always looked through to what is recorded and represented upon the film or video) these procedural algorithms are not just substrates for our representations but actively involved in crafting and shaping the form (sequences, relations, options, what becomes or does not become available to see and hear) of the interactive documentary in itself. In this way these algorithms matter, deeply, yet they are invisible on the surface of the interactive documentary.

To study an interactive documentary what is it that we might need to know about these things that we cannot see? To be

able to make an interactive documentary, what is it that we need to know about these things that we cannot see?



Slide 7. Collage that includes a screenshot from *The Whale Hunt* (copyright Jonathan Harris, 2007, used with permission).

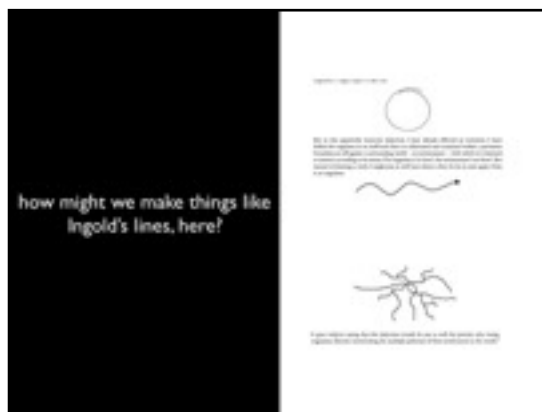
What We Cannot See

One way to study what we cannot see invites us to expand what we think an interactive documentary is.

When I think of what an interactive documentary is I see it as something made up of lots of different scattered parts that are only loosely held together. Interactive documentary, as a term, then seems too small, or limited, for such a loose collection of parts. The phrase I want to use in place of interactive documentary is 'computational nonfiction'.

Computational nonfiction describes works that are best considered as assemblages or actor-networks. These actor-networks account for computers as calculating, procedural machines, as well as networks that are distributed, relational, socio-technical ecologies. They are also nonfiction, which includes aspects of documentary, creative nonfiction, photography, sound, and science. These computational nonfiction assemblages include human and nonhuman parts, and the distinction between these categories is arbitrary at best, if not pointless in practice — my computer is a calculating machine, as am I, or, as I talk to my mobile phone asking it to send a text to my family on the other side of the planet the social, human, technological, computational, and protocological are so entangled that it is very unclear what, if anything, is gained by trying to separate and arbitrate where one ends and the other begins. (The colonialist imperative of theory to build taxonomies and classifications needs to be ambushed by all means available.)

I think of such assemblages, these computational nonfiction actor-networks, as dark ecologies.



Slide 8. Page image from Tim Ingold's "Being Alive".
Copyright Tim Ingold, All Rights Reserved

What Our Machines Might Do

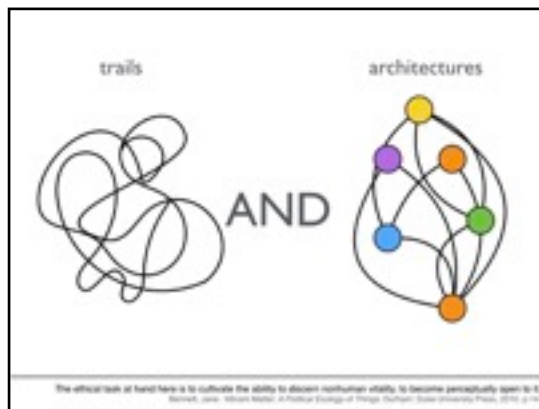
If we consider interactive documentary materially and as particular situated actor–networks, we can ask what an interactive documentary is for. When considered as computational nonfiction there is an invitation to broaden what sort of things we think interactive documentaries are, and how they work. This invitation asks less about what an interactive documentary means and more normatively wonders what they should *do*. Put simply, if we build interactive documentaries that are computational machines then (and I think this is part of the interest and value of the term 'machine') they are machines for doing what?

One answer relies on recognising that the world is made up of a myriad manifold of things that are all acting upon and with each other. This is, very loosely, described by Barad's 'entanglements' and 'agential realism', Bennett's *Vibrant Matter*, Ingold's celebration of the line and relationality over the circle's solipsistic separation of an inside and outside, and Latour's actor–networks. They are all, in varying degrees, relational conceptions of worldliness.

If the world is such an entanglement, or actor–network (I think the particular terminology is much less important than recognising the almost vitalist élan of relationality in these concepts), then we can conceive of a 'sociality' of things which does not require the human as centre or source. This disrupts documentary's traditional project as so much of documentary is intimately about the human. (This does beg the question of why, as humans, we wouldn't or shouldn't make documentary stories that are about *us*. For my own

emerging theoretical point of view I think that our histories of colonialism, feminism, and the Anthropocene, make clear that 'us' is a category fraught with borders that rely on essentialism and exceptionalism that are ill equipped for a world marked by enormous, unprecedented flows of people, energy, information, resources, species, and geophysical change.)

Computational nonfiction might let us make relational documentary machines that do not represent through story but rely instead on ways to accommodate entanglement and agency as event. If the world is relational we need relational tools and practices to make nonfiction works of, with, and about this world, all the while avoiding our species' desire to remake these relations and worlds into only avatars of ourselves.



Slide 9 Trails and nodes and links, aka relational architectures..

Backwards to Move Forwards

Recall the earlier screenshot of my hypertext essay in Slides 1 and 2. Also recall the description of my *experience* of writing hypertext changing my understanding of writing as form and practice. Hypertext is a relational writing and one cannot 'do' hypertext outside of this relational hypertextual milieu.

Furthermore, as materialism makes clear, it is practice that creates relations and it is these relations that make things. As as I hope is also clear, such 'hypertextual' structures are not defined by links between nodes, but in the emergence of relations realised as connections in the practice of making and using such works. (In other words relationality in a hypertext, how and why parts are linked, is multicausal and emerges in its making and reading.)

This relational milieu includes the trail that is in the left of Figure X. This trail describes any passage through a generative and procedural media assemblage. It is through such trails that the work comes to be actualised or realised in any particular using of it. The nodal drawing in the right of Figure X is the abstracted and virtual view of the architecture of a generative and procedural work. The nodes are content containers (their scale doesn't matter, it might be some text, a word, a video, or a web page made up of video, text, and menus), while the lines describe the *possible relations* that exist between these nodes. Importantly, what a work becomes lies in the choreography between these nodes and the lines they find themselves connected through. This choreography includes making and viewing such works.

Hypertextual structure is a simple shorthand to describe this relational architecture that allows for the emergence of trails. These trails emerge as a consequence of practice and the agency of our machines and equipment. Such relational media making creates messy media objects that facilitates the entanglements, meshworks, actor-networks, and assemblages attributed to the world by materialism.

The linguistic turn emphasized the role of language in mediating and producing reality. Recently, thinking has moved to consider objects through an iconic or pictorial turn, shifting analysis from *interpretations of representation* toward *encounters with presentation*.

Hudson Dale and Patricia R. Zimmermann, *Thinking Through Digital Media Rematerialization: Encounters and Creative Praxis*, New York: Praeger Publishers, 2013, loc. 102

Slide 10. Quote from Hudson and Zimmermann. Copyright Dale and Zimmermann. All rights reserved.

The question of whether, and how, the affordances of computers and networks in the service of nonfiction might allow for a materialist nonfiction practice shift our concerns from representation to enactment, description to encounter — as Hudson and Zimmermann describe. What purpose might such media machines achieve if untethered from story? This seems to be something quite different to much documentary, and indeed perhaps much interactive documentary. It also raises the question, offered here as a convivial invitation and conclusion, of whether interactive documentary can be a practice and form that enacts these tenets of materialism for nonfiction, rather than only representing them.

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Carles Sora



times that matter in interactive documentary

Work against time, time is money, acceleration of time, wasting time, globalized time...these are just a few of the different ways that time is referred to as a measure of the social, productivity, and control. This is an idea of time that in its development became the formal representation of the panoptical eye that everyone sees and controls. In contrast to — or against — this imposed and quantitative time there are alternative and subjective understandings of time that can be found in film practices since the avant-garde. These alternative understandings revoke and question the quantitative nature of time; and now, in digital films, even its material qualities.



Slide 1. Time is a product.

Clocks and chronometers are objects of control in relation to time. However, in the Internet realm they have become dematerialized, integrated and interwoven into our media environment of digital devices and interfaces. Their presence and materials of time as control has been diluted but still constitutes a mechanical force that drives and controls our experience under the skin of the interfaces we use.



Slide 2. Apple Watch advertisement and post digital time.



Slide 3. "Speed of Markets", picture by Varvara Guliajeva and Mar Canet. All rights reserved. Used with permission.

To live in society means to constantly interact with different indicators and experiences of time within different time scales. "Timescapes" is the concept that Barbara Adam uses to define the world as an experience of the sum of multiple temporalities. These multiple temporalities are micro and macro, and present in nature and in our bodies. Timescapes include time that is sometimes explicit and culturally represented in different ways, and also times that are implicit to our daily experience and consciousness. They are a mix of our biological and subjective experiences of time (the ever-changing sense of the passing of time) and the mechanical rhythms of society; all coexisting within the rhythms and times of our digital ecosystems.

A *timescape* is a landscape that covers historical and social time. It includes visible patterns and the aspects and traces that we cannot see that are part of ourselves. In this sense digital interfaces are useful tools for revealing these hidden patterns of time, as they can trace and show in different ways the time scales of our lives. Digital ecosystems make it possible to transform different measures of time from physical matter to digital systems and back again in a circular basis.

Speed of Markets, for example, is an interactive installation by Varvara and Mar that visualizes the rhythm of stock markets using financial data in real time. It reveals and confronts live financial data from different cities and transforms this data into the rhythm of various metronomes. In these objects we find represented different time zones, different rhythms of financial stock market prices, and the varying pace of global brokers working in different markets. *Speed of Markets* is a multi-

layered representation of abstract social actions that are translated and collected into a physical representation in real time thanks to digital interfaces.



Slide 4. Clip from Harold Lloyd's silent film "Safety Last" (1923).

In the timescapes where we live the materiality of digital temporal objects — their interfaces, and thus, their matter — become an important issue as these digital temporal objects offer new ways to circulate, address and deal with time as measurement and representation, and therefore create new experiences of time in society. This happens because the materiality of digital interfaces is not only grounded in the matter of the objects of technology (wires, disks, and screens) which are general purpose, but also in the data that circulates and gives pace to these digital systems. In the digital realm of software, Internet, data, and algorithms time has no particular matter — it is intangible — and thus its intangibility is not a necessary component of the definition of materiality.

Hence, if time is something intangible for digital systems and the Internet, then it could have different material representations that differ from the common objects that show time that we all know. This intangible time could transform content and phenomenon, as time could potentially be related to, and affect, other data and materials, as we see in the example of the metronomes of *Speed of Markets*. In these new *interfaces of time* what is at stake is how time is used, collected, and represented, and the actions users can now perform in and with time. Digital materiality then is not limited to the "stuff" of physical interfaces but also includes the actions and attributes that these interfaces to time entail.

This theoretical approach is not new in the philosophy of materiality, as the actions we perform when using an object affects our understanding of the matter of objects. As Leonardi says "calling something 'material' emphasizes also its

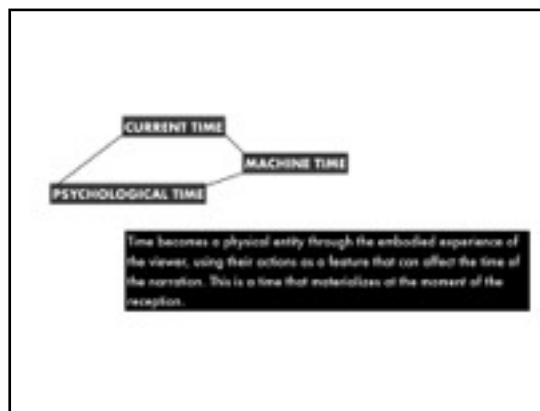
performativity — the notion that it provides people with capabilities” (n.p.), and these capabilities are affordances that enable or constrain their actions. Following Leonardi’s research ‘material’ “seems to refer to some property of the technology (in these case software) that provides users with the capability to perform some action” (n.p.).



Slide 5. Hayles quote and text.

Whereas objects, sites, and bodies make it easy to define materiality as having tangible qualities, software and the Internet appears intangible. The web as a materiality offers us interesting new relations between the physical and the digital because the inter-actions between each sees a physical awareness arise of the potential qualities of its temporalities as materiality emerge.

This is evident in interactive narratives where interesting new relations between physical and digital time occur. In interactive narrative the time of the reception of a work can be tied to, and affected by, the local time of the viewer. Where machines and bodies share these flows of temporal perceptions disembodied subjectivities, and therefore space and time perceptions, have now a physical materialization of the digital time that is a *posthuman* approach (Hayles) where machines and bodies share the flow of temporal perceptions.



Slide 6. Three categories of time.

Time can be understood in the digital realm as the material manifestation of an interface. Physical entities arise through the embodied interactive experience of viewers where their actions affect different forms and content in an interactive work. In film the interactive experience of time can be understood as part of film's source code that controls audiovisual material in real time. If in an analog film the minimum unit of time is materialised as the frame then in digital manifestations this minimum unit of time is materialised as the pixel. Potentially, any pixel can contain in itself any moment of the film's future, present or past, and in digital films a pixel changes over time. They are "transient time", similar to Aarseth's terminology where text and "scriptons" are not fixed. The organization of those pixels, and the interactions that the design offers to the users, entails the temporal manifestation and materialisation of digital time.

Therefore, we can say that in the different times present in film experience — the time of capture, the time of montage, and the time of reproduction and reception — we can add a "living interactive time". The user can affect, potentially, each of the times related to the film experience, making possible dialogue between the current time of the user, the machine time of the computer, and psychological time.

It is possible to find in electronic literature the first manifestations of this digital materialization of time where machine time, discourse time, and user time is creatively bounded.

In the *Speaking Clock*, a piece by John Cayley (1995), a poem is created that depends on the time of your local machine. The poem selects words containing letters that correspond to the numbers of the clock face. Every second a new poem is written depending on your local time. This poem then relates to the internal clock of the computer, the current local time of the user, and the internal discourse time of the piece. Each of these times are running and working concurrently underneath our information networks and systems, and arise at the time of the reception of the poem within the user's experience.



Slide 7. The "Speaking Clock" by John Cayley. Picture by John Cayley. All rights reserved. Used with permission.



Slide 8. Screenshot of “Cowbird” by Jonathan Harris (all rights reserved, used with permission)..

These intertwined temporal manifestations of immaterial time, in and out of digital systems, can be found in current interactive documentaries. *A Journal of Insomnia* (2013) is a webdoc by Hugues Sweeney and created by Bruno Choiniere, Philippe Lambert, Thibaut Duverneix and Guillaume Braun for the National Film Board of Canada (NFB). In this interactive documentary users are asked to register for an online appointment in order to be able to follow the stories and testimonies about experiences of insomnia and sleeplessness. The appointment to access the interactive documentary is made after 11pm, thus driving our physical experience of the time of reception into the late night to mirror the experience of insomnia.

Notice, in the case of *A Journal of Insomnia*, how time is materialized as a diagetical intertextual time where the experience of the user accessing the audiovisual material must occur during late night hours. This is the same period when insomnia unfolds according to the testimony of the documentary’s subjects. In this case time is materialized as a discourse role, thanks to the relation between the physical experience of the audiences’ time and the discourse time.



Slide 9. Screenshot from “Network Effect” by Jonathan Harris. (All rights reserved, used with permission.)

Another example is the Internet based interactive work *Network Effect* (2015) by Jonathan Harris and Greg Hochmuth. This project explores the psychological effect of the Internet as a site of new social networks created to promote dependent and addictive relationships. *Network Effect* is a visualization project where thousands of videos, tweets and shorts texts and audios from the Internet have been collected.

Users are constrained in the time they have to explore this project. The aim is to generate an anxious experience in relation to what can be experienced while surfing the Internet, as users can never access all the content there is.

In this project the temporal materialization of time is, again, linked to the local time of the audience. In this experience the local time is mechanized as a source time for the narrative in real time. Depending on your location, your navigational experience in *Network Effect* is limited to the average life expectancy of your country. In my last visualization, at the beginning of August 2017 in Catalonia, I had 8 minutes and 7 seconds in which to explore the film. Therefore, varying times arise here and becomes a material constraint for the film experience.

Returning to Adam’s idea of timescapes we have micro and macro temporal representations of life experiences that are represented and intertwined into a film experience in *Network Effect*. This is a materialization of social time, addressed as data through time, that is used as the basis of this interactive film.

In these interactive documentaries narrative time is not just a constructor of chronological discourse (linear or non linear), but a relational matrix between user and time as personal, social, and mechanical, and discourse time. It is a tangible time that offers relations between the physical and digital domains. This time appears explicit within the actions of users but is implicit and always present in our digital systems. It is this implicit non-material property of time that makes it possible to relate these different temporalities to each other. In contrast to analogue time that can only represent a current moment, a moment that disappears at the moment of its existence, digital time may also represent its trails and possible futures. It has the capacity to represent past, and the future, at the same time.



Slide 10. Documentation of the installation “%” by Guillem Boyo. Credit: Carles Sora.

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Daniel Fetzner



wild topologies in 360°: a fly on the inside of a sphere
(with many thanks to Martin Dornberg for his contributions and continuous discussions)

In current media studies the human is increasingly seen as a social being in the context of complex material formations. This text uses one part of the artistic research project WASTELAND (2016) as a tool to reflect these entanglements: a conversation with the speculative realist Graham Harman in the garbage city in Cairo. This radical encounter of bodies, matter, and thoughts was recorded with 360° video. The recorded material can be topologically deformed, via a stereographic projection, in order to construct a media ecological meshwork with its viewer.



Slide 1. Detail, Vittore Carpaccio (1496), *Healing of a Madman*, Venice.

Venice

The sea is mother: la Mer, c'est la mère. It is a prebiotic soup constantly heated by two circles of active volcanoes - one in the Atlantic, one in the Pacific.

Michel Serres (Hermes 1982, 38).

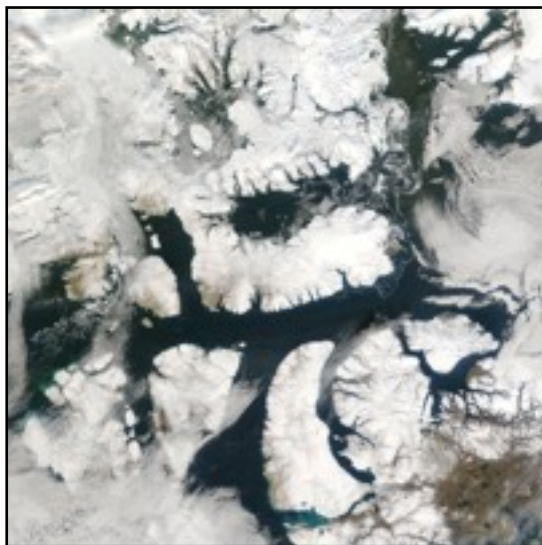
In 1736, Leonhardt Euler established the field of topology by formalizing the famous *Königsberg Bridge Problem* in the search for possible crossings. With seven transitions on two islands the hodological challenge was still quite imaginable.

The highly sophisticated topology of Venetian bridges is a much more proliferative complex of relationships. The space to be traversed has various cracks. Therefore the philosopher Michel Serres considers Venetians as experts in the field of cutting and joining, closing and opening. Serres understands the bridge as an operator within a complex cultural process of a rushing sea. This construct implies crossing borders while preserving them at the same time.

A bridge is first a path that connects two shores. It joins the unconnected by making the discontinuous continuous. At this point Serres brings the parasite as an *excluded third* into play, who is paradoxically at the same time drowned and muted. The bridge, as Wolfram Pichler summarizes, is therefore an operator in a multi-layered culture / nature process.

Serres calls the concept of the Venetian bridges a "wild topology". He exemplifies it as a Homeric odyssey which can be also read as an interplay between separating and connecting spaces. Another reference is Oedipus at his existential bifurcation, located in a bottleneck: on the left ignorance,

insensibility, and the unconscious, and on the right knowledge, consciousness, the word of the oracle Pythia. The family tree with father and mother, murder and incest. Each space that has to be traversed in this graph has a topological split. It is the concept of symbiogenesis which allows such trees not only to branch out, but also to re-crosslink, as it is the task of culture to separate spaces and reconnect them.



Slide 2. Satellite image of the Northwest Passage. September 15, 2007. Image: NASA.

Northwest Passage

In the turn from spinning a thread to stretching it from point to point lies the hinge between bodily movement and abstract reason, between the textile and the architectonic, between the haptic and the optical, between improvisation and abduction, and between becoming and being. Perhaps the key to the ontology of making is to be found in a length of a twine.

Tim Ingold (2011, 219).

A hundred years after Euler the mathematician Bernhard Riemann showed in his *complex manifold theory* that space from a topological point of view can be curved, compressed, and stretched. In the Riemannian geometry an inner product on the tangent space at each point varies smoothly from point to point. Angles, proportions and dimensions are negligible. While the Euclidean space fits to absolutism and the right measure of the king, this topological space is one of relational being. Our bodies *work* often in the Euclidian mode, but they see in a projective Riemannian space, they touch and manipulate, suffer, listen, and communicate in other ways.

In order to handle our thinking as multitude Serres is focusing on the intermediaries of Hermes, parasites, angels, the labyrinth and last but not least: the nautical ideal type of the Northwest Passage. These intermediaries are based on the principle of connecting and disconnecting. Hence ecological thinkers like Uexküll, Ingold, and Deleuze establish the *line* as a crucial protagonist in their thinking, as thought must constantly cross and cut the chaos. Artistic research – as we are practicing it – can also be considered as an ongoing process of such topological folding(s) and lines.



Slide 3. Ptolemy's map (150AD), reconstituted in the Fifteenth Century.

Celestial Sphere

The look does not overcome depth, it goes round it.
Maurice Merleau-Ponty (1968, 219).

Ptolemy explored such topological foldings already, 100 years after Christ. In his work *Planisphaerium* he worked on the geometry of mapping figures inscribed in the celestial sphere onto a plane using what is now known as stereographic projection. This method preserves the properties of circles and horizontal lines within all kinds of deformations.

In the age of computer graphics any 360° video matrix can be rendered in various polymorphic states. Our eyes wander the inside of a sphere on which the video is mapped. The ethnographic figure of the fly on the wall becomes an ant roaming inwardly in a balloon, producing emerging perspectives that a human can explore using a Head Mounted Display (HMD). Depending on your bodily movements the depicted objects in the video are continually folded, knotted, and contextualized into new relational structures in what is a radical tangent space with no direction home.

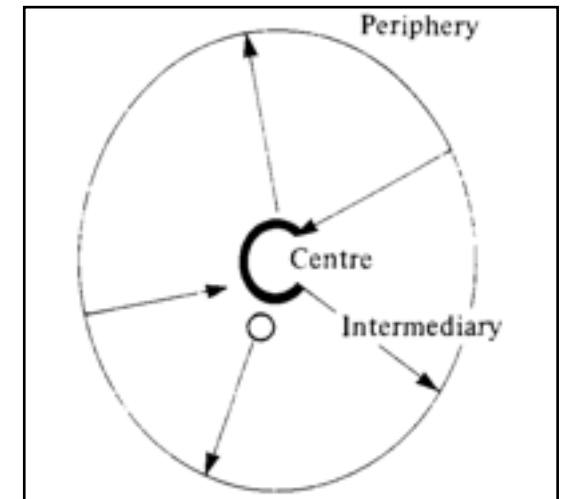


Figure 1. Substitution of the metalanguage to the infralanguages of the periphery. (Latour, 1988, 90.)



Slide 4. "Zero Person Perspective Video", Mokkatam Village, Cairo.
Image: Daniel Fetzner.

Zero Person Perspective

The perceived thing is not an ideal unity in the possession of the intellect; it is rather a totality open to a horizon of an indefinite number of views which blend with one another according to a given style, which defines the object in question.

Maurice Merleau-Ponty (1964, 16).

In the Anthropocene we need a change of perspectives that avoids the classical divisions of human, animal and things, subject and object, technology and nature. Timothy Morton proposes a "Zero-Person-Perspective" that dissolves the frame of the *picture* using flat ontologies in order to overcome anthropocentric points of view.

In a stereographic projection the user is moving out of the center of the sphere towards the periphery opening a space of radical visual neighborhoods that is topologically fluid. This change of perspectives raises ontological questions. Is the resulting multitude of inner scenic object-relations initiating new "transitional objects" and a flow of material substances? How does this mix with our experiences and behaviour? And how do materialities appear in the context of a 360° stereographic projection? What are the consequences for an embedded mode of observation or participation of 360° stereographic projects? Does this realize Morton's "Zero-Person-Perspective"?



Slide 5. Matter Eye. Satellite image of Hurricane Irma, September 6, 2017. Image: NASA.

Matter Eye

Morton also proposes the concept of “hyperobjects” to describe phenomena that are massively distributed in space and time that transcend human spatio-temporal limitations. Such things as global warming, polystyrene and radioactive plutonium are examples of what Morton calls “hyperobjects”. The zero-person perspective he proposes is intended to create an understanding that reveals the five different qualities of hyperobjects: viscosity, nonlocality, temporal undulation, phasing, and interobjectivity. Hyperobjects stick to those who interact with them. They have broken forever the aesthetic frame separating the viewer from the viewed.

I cannot think about what I have seen without having been part of it. Looking from the outside, objects are often described as lumps, nodes and networks. From the inside they appear as relational processes, as acts of experience and *matters of concern*.

The topological transformation of interactive stereographic projections allows the viewer to imagine the things as actively seeing ones. This transformation might have the potential to connect with things as uncanny psychic entities - to *give things themselves a language* in the sense of Latour, and perhaps to initiate a *prophylactic apocalypse*. This instance can be named a *matter-eye* with a conceptual bond to Dziga Vertov. Spacetime turns as *matter-eye* from a grid like box into what Einstein calls a “reference-mollusk” (Morton 2011, 84).



Slide 6. Trinity site atomic explosion, 0.016 seconds after explosion. July 16, 1945.

Trinity

It is crisscrossed with axes and thresholds, with latitudes and longitudes and geodesic lines, traversed by gradients marking the transitions and the becomings, the destinations of the subject developing along these particular vectors.

Gilles Deleuze and Felix Guattari (1983, 19).

The ultimate launch of the anthropocene takes place at the Trinity Site on July 16, 1945 at 5:29 am. This moment in the Nevada desert terminates the linear-teleological narration of *human history* with a given final determination. After this incision film can no longer be understood as a stimulus-response scheme, but as a meshwork of narrations and their total absence at the same time. Deleuze therefore opposes the reception of *movement-images* versus the perception of *time-images*.

Following the change of perspective of the Anthropocene the philosopher Graham Harman imagines a chunk of plutonium abandoned in the desert, with its diverse environmental relations. In a continuation of Michelangelo Antonioni's *tempo e morte* photography this hyperobject assemblage could be expressed as stereographic projection with an implicit potential of crossing lines of sight. The sono-optical signs of the radioactive hyperobject can evoke a sticky tactility by triggering mental experiences of the viewer. The interaction and handling of the projected sphere as an inner eyeball contracts not just their time experience, but activates specific senso-motoric schemes. Seeing becomes less an intentional act than a psycho-material entanglement of partially-disembodied affections.



Slide 7. Still from 360° video.
Mokkatam Village, Cairo, 2016.
Image: Daniel Fetzner.

Transitional Object

Things influence our body via the *missing half-second* of our consciousness. The physicist Hermann v. Helmholtz described this phenomena in 1862 as a spatio-temporal interval between stimulus and response. Internal and external relations become indistinguishable in a *temps perdu* as intermediate areas arise.

According to the psychology of Melanie Klein and Donald Winnicott inner and external phenomena are related to each other through “transitional objects”. They are intermediately matted between the body of the child, external things and the parent body — like the soft lining of the edge of a blanket, or the voice of the mother. These material objects are intertwined with the self as in a Möbius strip, thus overcoming symbolic forms of representation.

Through the intra-active experience of the stereographic projection the body and its environment are entangled in affective, liquified relationships. Experiences in the *missing half-second* are drawn out of the narrative flow from the Gnostic into the Pathic. The *How* of the phenomena, its affectivity, gains importance by generating knots or meshes of transitional objects.



Slide 8. Adolphe Braun. *The Sphinx and the Pyramids*. (1865/1875.) Source: https://commons.wikimedia.org/wiki/File:Adolphe_Braun_-_The_Sphinx_and_the_Pyramids_-_Google_Art_Project.jpg

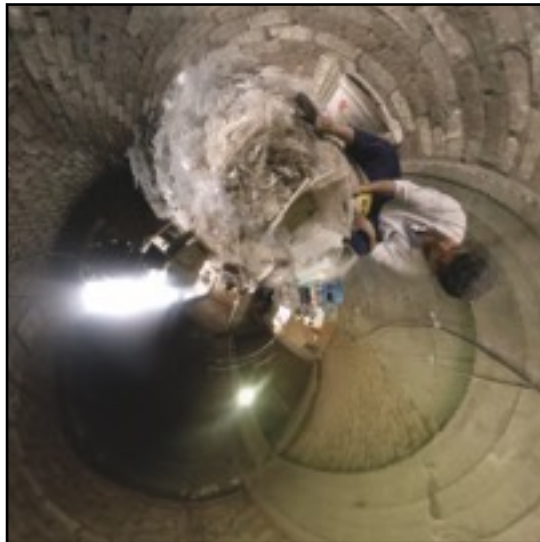
Body Without Organs

The body without organs is permeated by unformed, unstable matters, by flows in all directions, by free intensities, by mad particles. « *The body without organs does not function as an organism, but consists of thresholds and planes.*

Gilles Deleuze and Felix Guattari (1987, 45).

The Gaia hypothesis by James Lovelock imagines the earth as live lines integrating inorganic matter. Any object can be seen as part of Gaia's *body without organs* while the whole is also always less than its parts. Deleuze exemplifies this principle using the paintings of Francis Bacon, and this gives us a notion how this aesthetic concept could be realised.

Bacon's paintings use the forces of isolation and dissipation that act on the figure in order to disrupt narrations that are too anthropomorphic. They improvise between fore and back ground. Rhythms dip into the chaos, where dense, intense bodies are penetrated by waves. The "sensation" is vibration and this produces continuous deformations. In the stereographic projection too, twisted and vital figures do not act like an abstract or representational painting on the brain, but directly on the nervous system. In this sense these topological turns have connections with sensomotoric schemes that can cause various experiences of *bodies without organs*.



Slide 9. Still from 360° video.
Mokkatam Village, Cairo, 2016.
Image: Daniel Fetzner.

Harman's Plastic Bottle

We could at least allow other entities, sentient and non-sentient, to talk to us.

Timothy Morton (2011, 80)

The project WASTELAND negotiated the question of how matter, organisms, and geographies in the age of the technosphere can be experienced as flat relational connections. This artistic research is focussing on the handling of resources by comparing two garbage systems, one in Cairo, Egypt, and the other Eschbach in Baden, Germany.

One performance of the research happened in May 2016 in a courtyard of the Garbage City in Cairo amongst tons of matter, people, points of view, and technical artefacts. The parasitic experiment wanted to evaluate *object oriented ontologies* in the middle of things — superimposed by smell, heat, and sounds of sorting and shredding plastic waste.

One of the intruders in the improvised setting, the philosopher Graham Harman, was holding a plastic bottle in his hands, ontologically similar to the objects being sorted on the floor. The bottle was not just supplying his body with water in the heat and dust, but was part of his body language and expression. According to the definition of waste as *matter in the wrong place* Harman's bottle was a very ambiguous figure in this environment. Captured as a 360° recording the bottle underwent an inverted section. The radical shift of perspective tried to catch its multiple dimensions without a clear point of view. At the end of the session Harman carried the empty plastic bottle in his taxi out of Garbage Village again.



Slide 10. Still from 360° video.
Mokkatam Village, Cairo, 2016.
Image: Daniel Fetzner.

Particle

A struction is the uncoordinated simultaneity of things and beings. It is the contingency of their co-affiliation, the scatter in the proliferation of aspects, kinds, forces, forms, tensions and intentions.

Jean-Luc Nancy (2011, 65).

Meshes, waste, and the parasitic stand for a new ontology and new cybernetics. A bio-medial ecology which generates an experiential surplus and new complexities, and at the same time extinctions, disturbances and contingencies. Which material and informational connections emerge? Which exchange of things, signs, and particles arise? How does the observant practitioner entangle with this metabolism?

The navigation of a user through the 360° material of WASTELAND can be regarded as an improvisational act within an inter-objective and intra-active struction in which complex phenomena fold topologically into the viewer's mind and body. The off-screen is creating a potential space of manifold object-relational connections and arbitrary montages. Rhythms, atmospheres, and coincidences create a polymorphic flow of experiences, and a correlating stream of data, which stands outside of the concept of central perspective as a symbolic and representative form. Waves of action are crossing borders.

With many thanks to Martin Dornberg for contributions and discussions.

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Judith Aston



the new materialism: human and algorithmic agency within interactive documentary



Slide 1. We want i-docs to be...
Image: Judith Aston.

Slide One is a quote from the introduction to my co-edited anthology *i-Docs: The Evolving Practices of Interactive Documentary* with Sandra Gaudenzi and Mandy Rose. The book contains a number of chapters which bridge the divide between theory and practice to tackle key topics and themes within interactive documentary. Many of the contributors have spoken at the biennial i-Docs symposia, and the book is divided in three sections: “Co-Creation”, “Methods”, and “Future Horizons”. The quote of Slide One confirms that, in curating the i-Docs research group and its associated symposia, Mandy, Sandra and myself are keen for interactive documentary to remain an expansive concept that provides a platform for interrogating diverse forms and embracing a variety of emerging trends. Within these forms and trends I am keen to put people, as opposed to machines, at the centre of the design process and to engage in debate about our evolving relationship with computers that acknowledges a humanist perspective as my starting point. It is within this spirit that I turn my attention here to considering what the material turn, and the concept of the posthuman, has to offer and how this might be inflected within the field of interactive documentary.



Slide 2. Screenshot of a Twitter post by Jonathan Wade.

Slide Two is from a Twitter post that juxtaposes Facebook CEO, Mark Zuckerberg, at the Mobile World World Congress in 2016 with the iconic 1984 television advert that introduced the Apple Macintosh personal computer. Zuckerberg is seen smiling amongst a sea of seated people wearing VR headsets who are unaware of his presence in that moment. This photograph was interpreted by many as having Orwellian overtones, as a warning against what might happen if virtual reality with its isolating tendencies becomes a mainstream medium. Zuckerberg later qualified this image by saying that he was smiling because the audience were engaged in a shared communal experience, which was the opposite of social isolation. However, the comparison I am making here is to the Apple advert because this shows a woman saving humanity from the conformity of George Orwell's Big Brother. Though never specifically stated, this woman was widely understood to represent Apple with Big brother being IBM, which was why Apple's tag line in this ad was "1984 won't be like '1984'". When combined with Chris Milk's recent comments (2015) about VR being the ultimate 'empathy machine', this image of Zuckerberg troubles me, as I worry about its implications of technological determinism and an overly utopian view of technology as a force for good.



Slide 3. Screenshot, i-docs website. Image: Judith Aston.

In interactive documentary interest of late has been shifting away from interactivity and towards immersion. Immersive VR has become the next ‘big thing’ that people are trying to build sustainable business models in and for. This move toward immersion is partly a reflection on the current state of technological developments in VR, with the promise of more immersion taking the focus away from interactivity. It is, however, limiting to be thinking only about virtual reality, because augmented reality, mixed reality, and of course artificial intelligence are big players too. Different platforms and creative uses of these technologies offer different combinations of interactivity and immersion and so these ‘affordances’ have to be seen as interrelated and intersecting factors for interactive documentary. I wrote the post in Slide Three after the 2016 iteration of the i-Docs symposium, arguing that it was important for interactive documentary to not be subsumed by our current obsession with virtual reality. Focusing on Janet Murray’s four principals for interaction design (1997): procedural (composed of executable rules), participatory (inviting human action and manipulation of the represented world), encyclopedic (containing very high capacity of information in multiple media formats) and spatial (navigable as an information repository and / or a virtual place) as affordances, I reiterated my humanist perspective and made a plea for interactive documentary to remain expansive and platform agnostic.



Slide 4. Front page of the Daily Mail, December 4, 2016.

Bringing this discussion back to the Internet, my concern with keeping human, as opposed to algorithmic, agency at the centre of its operations has become even more important in light of recent political events within my own country. The debate around foreign interference through social media in the Brexit vote is mounting, and the assertion that Russia used Twitterbots and trolls to post more than 45,000 messages supporting the leave campaign in the run-up to the vote is troubling (Gibbons et al, 2017). There are also forces working against democracy within our own concept of the 'free press'. In particular the tabloid headline of Slide Four, written in November 2016, was widely criticised at the time for its blatant disrespect for British parliamentary process and the rule of law. It was, however, still deemed to be legal. Whilst there was clear human agency and an identified author at the heart of this headline, irresponsible writing of this nature sets a tone which is anti-democratic. My point here is that in this type of climate, news-aggregating sites are making the situation worse by inviting unidentifiable statistical manipulation. As a result, modern social media institutions can be seen to be fuelling the problem.

On the other side of ‘the pond’ from Britain we have a different take on this debate with Trump and his onslaught against the ‘fake news’ of the American liberal press. Slide Five is from his February 2017 speech to the Conservative Political Action Conference in Washington DC, in which he referred to the media as the “opposition party” to his administration, and blamed news organisations for stymieing his agenda. Trump’s notion of the news media as an “enemy of the people” shows no understanding or respect for the role of the free press or for the personal integrity of journalists. This is language more typically used by U.S. leaders to refer to hostile foreign governments or subversive organisations, and it echoes the language of autocrats who seek to minimize dissent. Trump’s desire to shut down criticism as “fake news” can be seen as a move towards the world described by Orwell’s novel *Nineteen Eighty-Four*. In Orwell’s novel the Ministry of Truth rewrites the past to erase it, and once rewritten it becomes forgotten so that the lie becomes the truth. This obsession with ‘alternative facts’ is therefore a very dangerous turn away from the democratic principles of tolerance and debate.



Slide 5. Still from Fox News broadcast February 24, 2016.



Slide 6. Screenshot of a Twitter post by Paul Stoller, June 13, 2016. Image: Judith Aston.

It troubles me, in relation to my involvement with interactive documentary, that the very tools I want to use to promote diversity and respect for multiple points of view appear to have been hijacked by forces that run counter to this agenda. In relation to this, anthropologist Paul Stoller's public provocations in the *Huffington Post* are noteworthy. Stoller (2017) states that we need a slow, listening anthropology to counteract the fast culture that surrounds us. His argument is that "in fast culture our on-line connection creates social disconnection....we are flooded with information and yet we seem to become more and more ignorant about the world of politics, culture and social life" (n.p.). Referring to Sherry Turkle's 2015 *Reclaiming Conversation* he suggests that "in the fast culture of the Age of Trump, perhaps it is time to slow down a bit, engage in conversation and take the time to reclaim our humanity" (n.p.). In Turkle's words: "We had a love affair with a technology that seemed magical...it worked by commanding our attention and not letting us see anything but what the magicians wanted us to see. Now we are ready to reclaim our attention — for solitude, for friendship, for society" (361).



Slide 7. Screenshot from Immerse, "Emplaced Interaction and Interactive Documentary". Image: Judith Aston.

My response to this dilemma of technology, speed, listening, and the social body has been to come up with the term 'emplaced interaction'. My intent is to decenter our growing dependence on social media and the potential seduction of virtual environments. I have discussed emplaced interaction in my contribution to the i-docs anthology (2017b), and more recently online (2017a). Emplaced interaction wants to marry the digital with the analogue to create shared experiences that include face-to-face communication and place making as being important to community. When applied to interactive documentary such emplaced interaction offers a strategy which marries the digital with the analogue to create shared experiences at their core. These experiences might come out of long-term engagement with place, or they might be short-term interventions, creating what have been called 'temporary autonomous zones' (Bey 1991). With clear resonances with Sherry Turkle's work, I use emplaced interaction as a strategy which can help to "keep technology in its place" and which works towards ensuring that, in a globalized world, "the Internet, virtual reality and ultimately robots do not take us over" (Aston 2017b, 234).



Slide 8. Screenshot of Rosi Braidotti keynote lecture on YouTube. Source: <https://www.youtube.com/watch?v=3S3CulNbQ1M> Image: Judith Aston.

On the one hand there is Edward Said's observation that "humanism is the only – I would go so far as saying the final – resistance we have against the inhuman practices and injustices that disfigure human history" (1978, preface). On the other is the challenge of Rosi Braidotti's 'critical posthuman stance' (2016) that asks us to think about what it means to be human in a post-anthropocentric world. This critical posthumanism is a world linked to 'new materialism' (Dolphijn and Tuin 2012) which acknowledges that things and other living organisms, as well as humans, have agency. Having spent time with Tibetan monks and lived for a year in Java, I am in full agreement that we need to consider the entanglements that human and nonhuman agency brings. This is very much part of my own worldview and I recognise the multi-perspectival and non-hierarchical intentions that lie behind them. My preference, however, is to place these within a responsive and evolving (even reconstructed – Crowley 2011) humanist tradition, as opposed to rejecting humanism outright in favour of posthumanism. This is because, in particular, moving human agency to the periphery in a posthuman world implies that we must make room for a new centre. My concern is with regard to who or what will occupy this new centre (AI and robots perhaps?) and that it could lead to us abnegating our responsibility to seek solutions to the mess that we have created.



Slide 9. Screenshot from the *Intra-Action: Multispecies Becomings in the Anthropocene* blog. July 2, 2012. Source: <https://intraactionart.com/2012/07/02/intra-action-influential-ideas/> Image: Judith Aston.

Karen Barad’s distinction between interaction and intra-action (1996) is also worthy of consideration. Whereas interaction focuses on the essential independence of separate entities, intra-action focuses on the mutual co-constitution of these entities. In this sense interaction stresses relationships between discrete entities whereas intra-action stresses relationships within inextricably linked entities. Barad argues that if we look at the web of relations that exists around things, this wider context implicates us all in the need to confront common problems. This contribution from new materialism makes a lot of sense to me. It reminds me of a passage from *The Third Policeman*, one of my favourite books (O’Brien 1993), in which a policeman is said to have been riding his bicycle so much that he and it have become one and the same “as a result of the interchanging of the atoms of each of them” (88). O’Brien goes on to say that “when a man lets things go so far that he is more than half a bicycle, you will not see him so much because he spends a lot of his time leaning with one elbow on walls or standing propped by one foot at kerbstones.” (89)

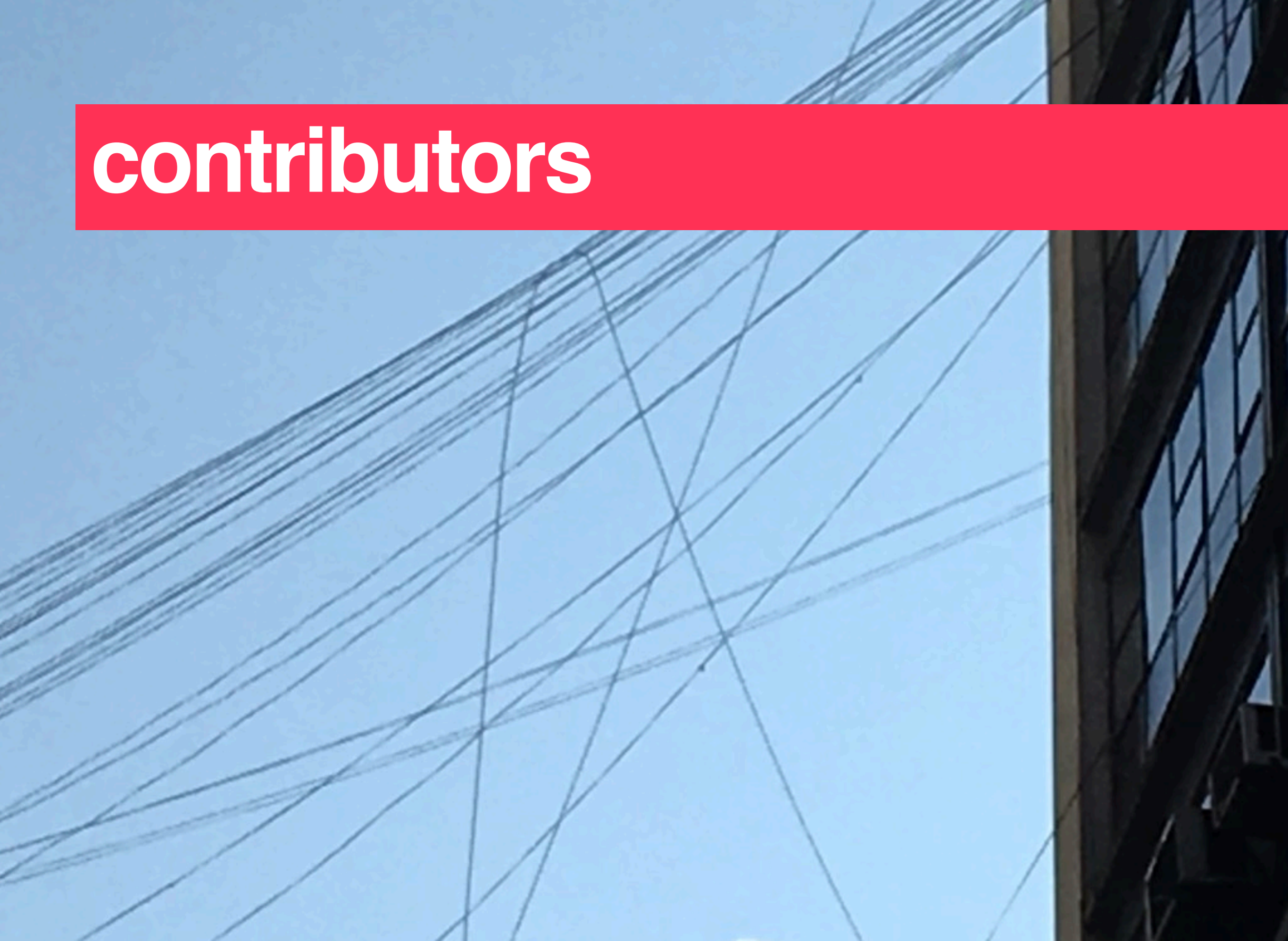


Slide 10. Screenshot of YouTube, "Three Minute Theory: What is Intra-Action?" by Stacey Kerr. Source: <https://www.youtube.com/watch?v=v0SnstJoEec> Image: Judith Aston.

On a less surreal note, Barad contends that intra-action, as a form of 'agential realism', gives us a greater sense of collective responsibility and removes the argument that if something doesn't affect me I don't need to do anything about it, simply because with agential realism so much affects so much else. Agential realism provides a collective sense of ethics, situated by Barad within posthumanist discourse, from which we could all benefit in these complex and interconnected times. As Paul Stoller argues so coherently in his *Huffington Post* articles, retreating into nationalism and protectionism cannot work. The question then is how can interactive documentary make a positive contribution? With its emphasis on polyvocality and multi-perspectival points of view, through juxtaposition, non-linearity, and the employment of mixed media modes, interactive documentary has a key role to play. For me, however, keeping human agency at its centre still remains central to this, as we have a collective responsibility to rise to the challenges of the 21st century and to not let the potential for technological dystopias take us over.

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