"A pine needle fell in the forest. The eagle saw it fall. The deer heard it. The bear smelled it."

Interaction as lived relation in the live documentary BEAR 71

Master thesis presented to the examination committee of the University of Utrecht.

Student: Jesse de Vos
Student: 3362930
Date: 13 Augustus 2012
Period: 4 of 2011/2012
Supervisor: Dr. Rick Dolphijn

Title from the interactive documentary B<small>EAR</small> 71 (2011), by Leanne Allisson and Jeremy Mendes.

CV and summary

Jesse de Vos is a master student in Film and Television Theory at the University of Utrecht. He is also involved as a teaching assistent for a number of courses in the department of Media and Culture Studies. He takes a strong interest in the documentary film. In previous essays he discussed artistic documentaries that in some way challenge the *modus operandi* of documentaries. During his internship as a researcher at the Dutch Institute of Sound and Vision his focus was on interactive documentaries and the challenges they propose for heritage institutions.

In this thesis Jesse de Vos explains how interactive documentaries are fundamentally dynamic and relational objects that require a theoretical framework allowing us to describe these relations. Building on the philosophical work of Deleuze and Massumi he explores the aesthetico-political implications of the interactive documentary BEAR 71 (2011).

Table of Contents

Introduction: BEAR 71 as a 'something happening'

Time starts running, counting down from twenty minutes. We are told that 'this is a 20 minute, interactive documentary'.[1] Our hand rests on the mouse, prepared to spring into action when required. Two distinct worlds collide. There is the documentary, with its tradition of quiet observation and objectification. And there is the interactive interface: disruptive and subjective. Our experience and the documentary unite in the same mutually defining dynamic for the next twenty minutes or so. As viewers we will see and hear the story of a bear, ear-tagged with number 71, roaming the forests of Banff National Park. This wild park is one of the most visited in the world which proposes a real challenge to nature conservationist trying to maintain a healthy ecosystem. As participants in the interactive constellation we are not only told this story though, we are in some sense roaming the same forest as this Bear 71. The interactive nature of the documentary BEAR 71 allows us to step through Alberti's window, to experience in some sense what Bear 71 experiences. Yet in no way do we leave 'our' world behind us. We tip forward into the world presented to us by the documentary, but never fall. We gathered in us the momentum of previous experiences and their movement continues into the present. Thus far, we have learned how to watch documentaries; we also know how it feels to be a user in an interactive setting. It is a relatively new thing to have these two combined. Perhaps this is the first time we are confronted with this unlikely mixture, yet they resonate with our past experiences which are felt in their coming together. We cannot describe BEAR 71 in isolation; the previously mentioned twenty minutes are no strict demarcation. They function more like a crystal: the multi-colored, fragmented realities of everything that preceded it unite in a singular beam of light.

This description rings true with the concept of the event as conceptualised by Brian Massumi in his recent book *Semblance and Event* (2011). In this book Massumi gives us a way to speak about things that occur only once, yet are in some sense part of a set. BEAR 71 as an event is a unique "coming-into-its-own", abstracted from the "worlds' general always-going-on" around it (Massumi, 2011:3). At the same time the

---

[1] For a brief synopsis of the documentary see appendix

event is full of 'manyness': "In the same act by which I feel that this passing minute is a new pulse of my life, I feel that the old life continues into it (James, in: idem:5)." The mouseclick that initiated the documentary is not the beginning, it is the resolution of the tension that preceded it and "really-next effects will unfold from its happening: to be continued (idem:35)."

Where interactivity is introduced to the documentary a number of new questions arise that need to be answered: How do we describe this interactive "something happening" in which viewer and text are unstable and dynamic unities? What approach allows us to unfold that feeling of the old life that continues into that event? How do we perceive the relations that are formed in and through the interactive documentary? And how do we bring out the full spectrum of the documentaries' aesthetico-political dynamic? In what follows it will be argued how the analysis of interactive documentaries in general can profit from an engagement with Deleuze and Massumi's philosophical work. BEAR 71 will serve as an illustration. Chapter one deals with the tools that are available to us at present for the analysis of documentaries. It will argue that these tools need to be replenished with ideas from recent developments in communication theory in order for them to be suited for the analysis of interactive documentaries. In chapter two the perceptual dynamic between the interactive work BEAR 71 and viewer will be closely examined. Chapter three explores some of the political implications of the documentary when seen from the theoretical perspective here presented.

1. Analyzing interactive documentaries

1.1 Documentaries and representationalist thought

For decades, documentary theory has profited from its engagement with representational thought and more specifically semiotics. The fundamental separation between reality and in this case audio-visual representation of that reality has been a key ingredient of our thinking about documentaries. This has in part to do with the development of film theory in general, where film is treated as some sort of language laden with meaning (the most predominant advocate of this approach is Christian Metz (e.g. 1968). There is a more fundamental link though between the documentary and representational thought which is often explained as the result of documentaries' affinity with the idea of indexicality. Traditionally the documentary is being associated with the photographic image as having a direct and physical relationship with the thing it represents. André Bazin, an important French film theorist, argues in 1945 that the photographic image functions much like a fingerprint which, using Peirce's vocabulary, reminds us of an indexical relation between the signified and signifier. This quality of photography was appreciated very early on. The French government in 1839 decided to buy the patents of Daguerre's invention arguing that photography was in fact a scientific instrument (Winston:37). The photograph has ever since had a connotation of objectivity. It is often seen as evidence, the camera as a witness. This is what Nichols calls 'a legal representation of facts' (Nichols, 1993:176). In BEAR 71, traces are visible of this line of thought: one of the chapters is called "The camera was a witness", referring to the camera mounted on the front of every train passing through Banff National Park for liability reasons. Also the frequent use of archival footage, in this case recorded by trail cams in the park, supports this line of thought.

There are problems though with this notion of objectivity in documentaries based on the ontological qualities of photographic process. First, the image resulting from this process might as well be constructed in front of the camera for the sake of creating a world, which we would consider fiction. For that reason Olivieri suggests to refine the definition of

indexicality "by adding that the object (an actual object, event or situation for that matter), the historical referent, of the (documentary) indexical sign is, or *refers to* an actual object that exists or existed in actuality and that has not *solely* been created for the camera (2012:37)." Secondly, the indexical only refers to a certain type of reality, which is the perceptually real, or photographic real. If a documentary portrays more abstract realities, such as social, psychological and future realities, it can use photographic footage in more symbolic or artistic ways. This is also the case in BEAR 71, which we will see in the following chapters. The problem with the notion of reality is that in a sense everything is real "according to its own category of being" (Whitehead in Massumi, 2011:67). A final, and for this thesis very important problem with the idea of indexicality is that with the arrival of digital imagery, the notion of indexicality is profoundly challenged.[2] Even though the recording of digital film or photograph can still function indexically (as argued by Godoy, 2007, but see also Rodowick:116), its output is so dynamic that it can be altered easily. It is no wonder that digital imagery is often being accused of eviscerating the real and "liquidating reference, truth and objectivity" (Lenoir:xiii). The electronic image, unlike a photograph, only exists in time because "it occupies a state of continuous present becoming (Rodowick:138)." It is this becoming that is our concern in the analysis of digital and interactive audio-visual productions.

The first and second problem show that indexicality, despite its prominent place in the discourse surrounding documentaries, has always been a problematic theoretical starting point. It is in the experiments with digital and interactive documentaries however that we are most forcefully confronted with the limitations of the idea of indexicality. We therefore need to reconsider the extent to which representationalist thought and semiotics can be helpful in the analysis of these recent documentaries.

---

[2] Bill Nichols for example acknowledges the impact of digitality for the analysis of documentaries. In his introduction to *Representing Reality: Issues and Concepts in Documentary* (1991) he writes: "Digital sampling techniques, whereby an image is constituted by digital bits that are subjects to infinite modification, renders [the] argument for the unique indexical nature of the photographic image obsolete." He then concludes about this particular book: "This study is limited to nondigitized imagery."

1.2 Pragmatics and materiality in the analysis of interactivity

In representational approaches the documentary is normally conceptualized as a text, the maker as an author and the viewer as a reader. Nichols talks about these as "three stories that intertwine" (2001:63). These textual concepts can be found, although with different implications, with influential documentary theorists such as Nichols (2001), Eitzen (1995) and Odin (2011). Their contributions have proven valuable both in defining the documentary genre and in analyzing the meaning of documentaries. When interactivity and digitality enter the picture their contributions need to be reconsidered and replenished because what we are faced with is no longer a fixed, stable entity. Authorship is no longer necessarily expressed in the immanent characteristics of a production, but can be seen as evoking a certain response or initiating cultural processes. The reader becomes a user who can contribute to his or her own media experience. A text, finally, is a never finished dynamic entity, linked to an infinite number of other texts. One could say that the interactive setting functions more like a conversation than a classic textual experience.[3] There are two developments in communication theory that help us to analyze these type of media experiences.

First, there has been a renewed interest in pragmatics, where attention is paid to the context (time, place, actors, etc.) in which an utterance is being made. One of its merits is its use for conversational or discourse analysis. Philosopher John Searle makes a case for pragmatics as a helpful tool to discern between fiction and non-fiction. He uses Speech Act theory, as introduced by his former professor John Austin (1962), to explain that in a fictional work the illocutionary act is pretended, but the utterance act is real (Searle, 273). In non-fictional texts (among which the documentary film) he considers serious assertions, or serious speech acts the dominant mode of address. In Searle's work then we see a strong focus on the intention of the author to recover the meaning of a text. A problematic element to this proposition is that the intention of the author is often not a part of the 'text' itself.

---

[3] It is for this reason that the terminology of text, author and reader will be avoided in the analysis that follows. I refer to the viewer, or more fundamentally the participant in the interactive constellation, as 'we'. We are the dynamic entity that moves in, through and with the interactive documentary.

Even if information about this is available, it can be either ignored by the viewer, or concealed and distorted by the author itself to achieve a certain effect. Pragmatics is also part of Roger Odin's model of communication which he calls semio-pragmatics (2011). As the label suggests his attempt is to both hold on to the autonomous existence of a text and acknowledge that the meaning of a text changes with the context (15). Central to his "model" (or rather *outil de travail*) is the beam of constraints that directs the production of meaning and that forms a fundamental separation between the communication spaces of the enunciator and the receiver. The merit of this model is that it takes the context or constraints as the point of departure for the analysis (20-23). As a result there is room in this analysis for the changing meaning of a text, depending on the constraints that are at work. What it fails to do is move beyond the production of meaning. It also takes text, context and reader as pre-given, stable entities; at least for the duration of the reading experience. It is therefore less adequate for the analysis of what takes place in an interactive, digital documentary like BEAR 71.[4]

Another important element of more recent communication theories is the way in which materiality and the body take a more central place. It was until fairly recently that language as a medium was understood solely as a means of transmitting messages. De Saussure's model of communication, with its thoroughly dematerialized signifier and signified, was the starting point for many linguists in the twentieth century. In this view everything outside of language is simply noise and redundant. Language functions through its internal differences and as a result is locked in on itself. Butler, following Lacan, brings back the materiality of the sign: "To posit by way of language a materiality outside of language is still to posit that materiality, and the materiality so posited will retain that positing as its constitutive condition (1993:30, quoted in Manning:85)." Erin Manning, although appreciative of the fact that language is central to politics, insists that "what a body can do exceeds linguistic signification (86)." This development can be inserted into pragmatics. Pragmatics teaches us that "there is no language in itself (Guattari, 2011:27)."

---

[4] To be fair to Odin's approach: his attempt is not to describe the actual functioning of communication itself, but the model allows us to ask questions about that communication. It is a heuristic model that can only be used 'á titre provisoire comme idée directrice dans la recherche des faits (19)."

Language does not stand in separation of reality; verbs for example do not describe an event, instead they "come *with* the events as events come *with* these verbs (Dolphijn)." Words can be conceptualized as 'order-words'; they bring a certain order and give an order (Deleuze and Guattari, 2004:83-85). This is not just an order to, or order in an encapsulated brain, but to a living body. From a more phenomenological perspective one could say that the body is the "first locus of intentionality, as pure presence to the world and openness upon its possibilities" (Young:35). It is then not just about representation, but about felt connections, intensity, affect and movement. This is not to say that there is no representational way of *thinking*. It is still a dominant paradigm in our society. "We are (...) representational creatures, with representational habits of thought (O'Sullivan:16)." The approach here suggested makes this research a part of reality and it challenges us to think the world differently. In describing BEAR 71 as an event, we simultaneously alter our own thinking *about* the world we live in, in a way of thinking *with* the world we live in.

1.3 Diagramming interactive documentaries

When we take pragmatics and the appreciation of materiality and the body as the starting point for our analysis of communication processes; all aspects must be reconsidered. A medium is understood, not solely as a means of communication or as a fixed substance, but as a 'milieu of engagement'. Following Fuller, Parikka argues that media function as an ecology, "an environment of relations in which time, space and agency emerge (35-36)." The meaning of a work of art is no longer understood as symbolic, but as a relation between two or more forces "acting on one another in a reciprocal and transformative relationship (O'Sullivan:21)." We then move to what Deleuze calls a 'machinic' understanding of objects (1972, see also Colebrook, 2002), they are open systems that only function through the connection of their parts and in relation to other machines, hence the term 'machinic assemblages'. The idea of the machine is to lead us away from organisms or mechanisms as a final form or pre-given substance, which is particularly appropriate in interactive forms such as BEAR 71, where there is no final version. The question can no longer just be: what does this artwork mean in its final form? We must

largely abandon the in this question implied distinction between form and function. Instead we ask: what does the artwork do? Signification is only one of many effects of the art-machine. Other effects are for example the aesthetic effect (which can be called 'affect', O'Sullivan:23) and political effects. These effects however must be coupled as we will see, because "there is no less an aesthetic side to politics than there is a political side to art (Massumi, 2011:12)."

To analyze the documentary BEAR 71 and its effects we must first acknowledge that it is a fundamentally relational object. Interactivity is about more than mere activity (or movement) on behalf of the viewer. This activity is after all also evoked if not required by 'fixed' art forms. In a literary text for example a reader is able to make choices that shape his or her reading experience. Barthes introduces the concept of *tmesis*, by which he refers to the reader's freedom to read a text non-linearly and skipping sections. This he considers an essential quality of the enjoyment of a reading experience (1975:10-11). Other examples of interactivity in classical and modern art are the movement of the eyes that is required to grasp a composition in a painting, or the movement of the entire body in the case of architecture. Mulder hesitates to call this interactivity because "the work remains the same in material and energetic terms (2010:203)." According to him the interaction in traditional art forms only exists in perception and interpretation. In interactive art there is a mutually transforming dynamic through a physical connection. In the live documentary BEAR 71 we become aware of this connection between the artwork and ourselves during the time BEAR 71 is loading. We are presented with nine displays, the type we find in camera surveillance control rooms, showing the noise we associate with a disconnected cable or missing signal. As the loading progresses one by one the screens hesitantly come to life, showing black and white footage of wildlife. We are invited to use keyboard, mouse and webcam to engage with whatever is about to be presented on the screen. In other words: a connection is being made.

This connection however, is not to be understood merely in the instrumental way in which connectivity is understood in the rhetoric

surrounding interactivity[5], where connectivity is limited to the relationship between sender and receiver (whether human or technological). With our conceptualization of BEAR 71 as an event, a something happening, we can now understand the connection as something more than just that configuration.[6] The connection we are talking about here is best described as a 'coming together' relationally: "to refer to the full spectrum of vitality that the dynamic form really includes, potentially, abstractly self-expressed in semblance (Massumi, 2011:46)." Interactive documentaries cannot be analyzed in isolation of the world but they must be analyzed in their coming together with it. The connection is a "rhizome" that "ceaselessly establishes connections between semiotic chains, organizations of power, and circumstances relevant to the arts, sciences, and social struggles (Deleuze & Guattari, 2004:8)." "Rhizome", coined as a concept by Deleuze and Guattari, is essentially a biological term used to describe an a-centered root system. It is a non-hierarchical system without centre or central organizing motif.[7] It is built up of nodal points that are connected to each other. "A rhizome then fosters transversal connections and communications between heterogeneous locations and events. Indeed a rhizome, ultimately, is composed not of points but of the lines between these points (O'Sullivan, 2006:12)." Simon O'Sullivan, using this concept of the rhizome, describes a methodological approach that requires an interweaving of different disciplinary fields, such as philosophy, cultural studies, biology, the arts but also personal experience. The rhizome is not about the critique of previous theories and knowledge (as a Popperian ideal would have it), but about "the creative invention of concepts and the intensive mapping of affects and events

---

[5] See also Massumi: "we have to take distance on the rhetoric of connectivity that has been so dominant in the areas of new media and technology. We will have to treat connectivity as a narrative, a meta-fictional revisionism. (Massumi, 2011:67)"

[6] Lister et al propose to talk about configuration because it "suggests a two-way, mutually constitutive process through which both user and software are dynamically engaged in refashioning on another in a feedback loop (24)." Although the reciprocal nature of this configuration is a helpful corrective, it is still a thoroughly instrumental description.

[7] It is not surprising that the popularity of Deleuze and Guattari in the humanities is in a time when the medialandscape itself is characterized by non-hierarchical networks. As Pister puts it: "Contemporary media culture can only be thought in the stammering stream of an and... and... and... logic (68)."

(idem:11)." Massumi, looking for a way to describe and analyse events, comes up with the concept of the diagram. The diagram is conceptualized by Massumi, echoing Deleuze and Peirce, as follows:

"*Diagramming is the procedure of abstraction when it is not concerned with reducing the world to an aggregate of objects, but, quite the opposite, when it is attending to their genesis. To abstract in this fuller sense is a technique of extracting the relational-qualitative arc of one occasion of experience - its subjective form - and systematically depositing it in the world for the next occasion to find* (2011:14)."

Massumi, arguing from a process-philosophy point of view shows that these 'next occasions' do not actually connect to the initial experience: they stand in a relation-of-nonrelation and are therefore lived relations (idem:20). Like all relations they are virtual, yet they produce a semblance of the same order, they come into resonance, they are 'in-formation'. Techniques of existence then take this process as their object. This approach is thoroughly realist: "It affirms the reality of any and all takings-effect (idem:7)." We cannot pick the elements of our analysis based on theoretic principles or pre-conceived criteria. We must "take everything as it comes" (idem:85). There is a sense in which this process is never finished, although some relations present themselves more forcefully than others. Certain relations are prioritized through affect. Affect, as conceptualized by Bergson, refers to the way in which the body actively subtracts relevant images from the general flux of images based on our needs or functions (Bergson:38).

      Massumi's argument is that the concept of interaction must be translated into relational terms and that this is done by focusing on the gaps between things: "it is in those gaps that the reality of the situation is to be found (idem:67)." If artists restrict themselves to a mere instrumental notion of interactivity we end up with the equivalent of a video game. After we have discovered the trick of how it works we lose interest. An artwork like BEAR 71 works relationally; it forms lived relations. It will therefore become more compelling as we spend time interacting with it. It makes a lot of sense then to speak of interactive documentaries as 'live documentaries' (Gaudenzi, 2011). This concept can be used to refer to the perpetual liveness of the interactive documentary.

It further avoids the many and ideologically polluted uses of the word interactive. It also does justice to the ontological qualities of the digital image, which unlike a photograph is processual and dynamic. Finally, the concept of liveness is easily linked with the idea of the lived relations that constitute an event.

2. Perceiving the live documentary BEAR 71

Mentioned lived relations are formed in and through perception. The multiplicity of everything that precedes the event BEAR 71 can only become united through our experience of it (Massumi, 2011:4-5). The question we are faced with is then what the nature of perception is when we can interact with the work shown. In order to answer that question we must both look at the ontological qualities of the digital, interactive perceived object and at the way in which perception works as a "body-brain achievement" (Hansen:15). Most importantly these two must be considered in their coming together.

2.1 The body as framer of digital images

When the title sequence begins, the first thing we see on the black screen are the words: "There aren't a lot of ways for a grizzly bear to die, at least that's the way it was in the wild." This ominous statement in retrospect summarizes the story. The beginning knows the end; it is a seed, a static statement, which will crystallize an environment (Deleuze, 2005:72). In that sense the digital image of BEAR 71 functions as a neuro-image: "which (…) has the future as its basic form of time; speculations about the future determine its present and past (Pisters:263)."

The title BEAR 71 appears in the sleek digital design that is used throughout the project. No effort has been made to hide the digital nature of what is shown. In fact, every white pixel is visible and flows across the screen, always separated by at least one black pixel on each side. Their flow both accompanies and is accompanied by the repetitive, wave-like soundtrack by sound artist Tim Hecker. The digital image, unlike the photograph, is highly dynamic: it "involves a processing of data, the constant refreshing of the interpretation of that data through an interface projected on the screen at a frame rate that makes it appear static (Lenoir, xxii)." Digitization according to Hansen, "explodes the frame", it extends the spatial dimension of the image practically without limitation (75). It is for this reason that digital images support interactivity so well. Every image (or even parts of images) can become parts of an interface

that, when activated by a user, initiates another dynamic image. At the same time though, digital images can mimic its more stable predecessors, photography, film and video. This is what Rodowick refers to as the 'multivalence' of the digital screen: "[it] offers simultaneously the potential for passive immersion (as in watching a movie) and the possibility of active, general-purpose control (138)." Both aspects are visible in BEAR 71. We find ourselves in an abstract landscape representing Banff National Park, which we can browse and interact with. This interactive configuration is interrupted several times to be replaced by a linear video.

Digital images and their implications for theories of perception are central to Mark Hansen's book *New Philosophy for New Media* (2006). Hansen explains how in "posthuman machinic perception" it is argued that perception is simply about the processing of information. He explores this position and concludes that perception functions fundamentally different. He argues that the human body is the active framer of the image, especially in a digital regime. Digital images according to Hansen are nothing in and of themselves. They are "infused with specific affective tonalities and thus with irreducible "traces" of human embodiment (84)." Digital images are the new media regime, replacing Deleuze's time-image and movement-image. They no longer depend on a material frame. Transmitting and storing these images takes place in a technological world that is beyond perceptibility. For its materialization it is depending on the human body, which Hansen considers the new frame (13). Hansen grounds his argument in recent developments in neurobiology (most predominantly the work done by Francisco Varela on time-consciousness (249-255) and illustrates it with works by new media artists. He re-conceptualizes the affect-image as thoroughly embodied and argues how the digital image is an "interactive techno-sensorimotor hybrid" and that "it should be seen as the source for any technical frame designed to make information perceivable by the body (Lenoir: xxi)." Perception then is not just about vision, but more fundamentally about the proprioceptive, tactile and visceral functions of the body, about memory and duration, what Hansen calls "affectivity". Quoting Bergson: "there is no perception without affection. Affection is (...) that part or aspect of the inside of our body which we mix with the image of external bodies (Hansen:100)." The assumption about vision is that it is not dynamic, that it is simply

registering what is already there. Massumi argues how vision itself is already dynamic, whether the object seen is moving or not. The movement according to Massumi is always there, also in previously mentioned 'fixed' art forms. We see things that we don't actually see, for example the spiraling movement of a static vegetal decorative motif. We cannot not see the movement, it therefore is real (2011:41). Massumi uses a conceptualization of feeling to refer to the bodily quality of perception. An event is perceptually felt: "not so much "in" vision as *with* vision or *through* vision as a vision effect (idem:17)."

2.2 Perception as feeling

We then need a more bodily understanding of perception to grasp what really takes place in the relation between BEAR 71, us as viewers and our surroundings. BEAR 71 illustrates this quality of perception as feeling most vividly in the first video of the documentary. We are presented with grainy, shaky, low quality footage of an animal moving violently among trees and bushes. It takes time for us to realize that it is a bear stuck in a trap and struggling to break free. The visual qualities of the footage, low contrast, high warm-colour saturation and horizontal lines, remind us of electronic video. We are then, not for the last time, confronted with the multiple logic of combining media forms. Essentially digital, the footage here presented mimics the qualities of electronic video. Digital video has indeed swallowed up all other image formats. Digital imagery and electronic video are two of the three 'interwoven strands' discerned by Rodowick, the third one being photography or film. These "engage with one another in uneven historical rhythms (Rodowick:98)." Electronic, analogue video is more haptic than film according to Mulder and invokes reflection (2010:190-193)[8]. In haptic visuality the eyes function like organs of touch: "haptic looking tends to move over the surface of its object rather than to plunge into illusionistic depth, not to distinguish form so much as to discern texture (Marks:162)." The image only gradually unfolds figuratively and as a result "encourages a bodily relationship between the viewer and the image (idem:164)." The

---

[8] Mulder here follows Marks. She argues that the main reasons for video's haptic visuality are: the constitution of the image from a signal, its low contrast ratio, its electronic manipulability, and video decay (175-176).

sensuous relationship between viewer and image in this almost two minute long scene is mainly one of fear. The initial unclarity of the imagery, the violent movement, the partially blocked view, the guns; they all invoke a feeling of impending doom. They bear little content and thus do not primarily signify. They therefore do not address subjects' cognition, but rather "bodies' irritability" (Massumi, 2005:32). This bodily experience finds its peak at a close-up of the bear, awoken from its sedation, caught in a cage. The bear holds still for a moment and then out of nothing snaps at the camera, only held back by the bars of the cage. The uncontrolled bodily reflex of the person filming is clearly visible by the movement of the camera, and if it is not mimicked by the viewer it is most definitely felt. It is the pre-subjective, nonconscious fear that "strikes the body and compels it to action" (James, in Massumi, 2005:36). Before we can recover a hard-cut takes us to the final shot of this scene: the bear being released out of its cage. It runs off into the forest, clearly agitated and confused, shot at with rubber bullets and fireworks. At this point the bear does not understand; much like we did just moments ago, it *feels* intensity. This feeling of fear and the action of the body are initially in "a state of indistinction" (idem:37). From there they begin to diverge. The bear will eventually become exhausted and stop running, the affect however is cumulative: "It snowballs as the action unfolds (...) its rolling on after the running unwraps it from the action (ibidem)."

2.3 The forest has its own language

A mellow, melancholy voice-over begins to speak. Through language Bear 71 now retrospectively reflects on the situation; the fear can become enfolded in perception. The auditive, much like vision, is an experiential event. It cannot be separated from, and can hardly be dealt with in isolation of other sensuous modalities. Distinguishing between different senses is not intrinsic to perception, it is learned behaviour. A young child will only experience things as a feeling, as a whole body experience, and will not be able to distinguish between visual, tactile and aural input (Massumi, 2011:110-112). Massumi refers to Chions' idea of cinema as "audiovisual". A "fusion-effect" that takes off from vision as well as audio but it is irreducible to either of those (idem:81-82). Merlau-Ponty describes hearing again as a thoroughly bodily function as opposed to

what is described in the constancy hypothesis where we have in principle: "a point-by-point correspondence and constant connection between the stimulus and the elementary perception (8)." Instead, Merlau-Ponty argues that for example sound and color are "received into my body, and it becomes difficult to limit my experience to a single sensory department: it spontaneously overflows towards all the rest (264)." He then cites from research performed in which it showed that a low note makes blue a darker and deeper color. The audio-visual dynamic of BEAR 71 shows a similar pattern. The soundtrack changes with each chapter, sometimes it encompasses subtle sound effects that are in some way related to what is told by the voice-over; for example a train passing by, a dog barking or birds' chatter. These sound effects are only consciously heard when attention is being paid solely to the auditory. What it does achieve however is an intensification of the bodily experience of being in some way situated in the diegesis. The voice-over continues the story linearly whilst the visual output changes according to our intervention via mouse or keyboard.

The voice-over is Mia Kirshner's, who could be known from TV series THE L WORD in which she plays Jennifer Schecter, a narcissistic and confused lesbian. In the last season of the series she is murdered. Even though at times the content of what is being said is very factual (commenting on the exact sedative used at her capture and the precise amount of grain that is being lost by trains passing through the park) her voice is in stark contrast to the more common voice over commentary in documentaries, uttered by a strong and clear male voice "to confirm the objective and scientific tone" (Olivieri:123). Kirshner's voice sounds like the voice of someone who knows not objectively, but experientially. It hardly qualifies as what Nichols calls "Voice of God" commentary. It is mainly made up of poetic descriptions and only addresses us indirectly. These are the musings of someone who realises that there is no alternative ending. It is both submissive and resigned and speaks in the past tense as if the story told had already taken place. All narrative is retrospective; it is conscious revision and "palliative" according to Massumi; it is making sense of a semblance (2011:66). We easily accept that it is in fact the bears 'voice'. Here it shows once again that the domains of fiction and documentary are "enmeshed in one another" (Renov:2). A talking bear, by formal standards, would fall into the

category of fiction and is most likely to be found in a Disney animation film.

The story is almost exclusively told via audio, it frees the gaze to explore and be distracted. Many post-cinematic works, according to Shaviro are "weighted more to the sonic than to the optical (79)." Also referring to Chion he argues that television for example is 'illustrated radio' because sound and especially speech is always dominant. "Televisual images have no intrinsic logic of their own, they are only strung together through the guidance provided by sound (80)." BEAR 71 certainly serves as an illustration of this observation. The depiction of Banff National Park through which we navigate receives its coherence through what is said by the voice-ver. Live documentaries in general, as an upcoming post-cinematic form, also seem to affirm Shaviro's observations. Many such documentaries make use of radio-like voice over to tell the story.[9] Interestingly in the case of Bear 71, this animal is quite literally given a voice. Unable to speak for itself it is spoken for, what Spivak (following Marx) calls *Darstellung* (1999:256)[10]. Somewhere halfway the documentary BEAR 71 comments: "The forest has its own language." The wild has its own method of signification, of making sense. This is vividly illustrated in another statement by Bear 71. The rangers have shot rubber bullets at her at least twelve times in six months to chase her away from sites where people are nearby: "They call it aversive conditioning. I call it rubber bullets." We here see how using a different word does not just mean something different. As an order word it invokes a different response, it is an act of rebellion.[11]

---

[9] To name a few examples: SOLDIER BROTHER (2011), ONE IN 8 MILLION (2011), INSITU (2011), GODSLAKE (2011).

[10] The distinction Spivak makes between *Darstellung* en *Vertretung* is problematic. The aesthetic (the way something looks) and the political (the way something works) cannot be separated into two distinct realms. The same point is made by Spuybroek, illustrated by gothic architecture he argues that ornament acts like structure and structure acts like ornament: "It is beauty that works" (2011:44-45).

[11] Cf. Palestinian people fighting to regain land in Israel can be called terrorists or freedom fighters. The term that is used will not just affect your thinking about them, but also the way in which you approach them. The results for foreign policy are immediate and possibly violent (Stuart Hall:203).

3. Politics in the wired world

At the end of the previous chapter it is already becoming clear that when we describe elements of BEAR 71 and consider them as a diagram or rhizome formed by relations, we cannot disregard the politicality of the aesthetic form chosen. Documentaries in general have a long tradition of explicitly addressing political issues, of providing insight in social injustice and inequality. BEAR 71 follows in the same footsteps but mainly addresses political issues implicitly, through its aesthetic form. It is quite literally art at work.

The degree to which interactive elements change the material and energetic qualities of BEAR 71 is quite limited in its scope. We cannot alter the story, nor can we decide to be someone else than ourselves in the story. The algorithms that make the documentary work as it does do not change through our participation. The limitations have been built in carefully though by the artist and are equally (or perhaps even more) important for the "relational architecture" (Massumi, 2011:53) that is being formed than the possibilities given to us by the interactive parts. The challenge artists are faced with are not so much how to set up or maximize interaction. There are many ways to do that. The key question is: "how do you cleave an interaction asunder?" (idem:52). This 'cleaving things asunder', a phrase used by Deleuze, involves bringing out its transformability, variability and actualizing their virtuality (Critchley and Schroeder:567). We have seen that in order for us to analyze the way in which this cleaving asunder takes place, we can not refrain to interactivity as an instrumental phenomenon because there are no actual connections. The relations are found in the gaps between the various parts of the 'documentary machine', these relations are first and foremost felt intensely and their effects are thoroughly political.

3.1 A semblance of the wild

"It is hard to say where the wired world ends and the wild one begins," According to Bear 71. She specifically mentions how most birds can see ultraviolet light, some frogs can hear sounds that are twice as high as humans can hear and a platypus can smell electricity. She concludes:

"Just because you can't sense something doesn't mean nothing else can." In BEAR 71 we have an example of what Parikka calls the methodology of 'cross-talking' which "aims to establish connections across various regimes of enunciation and expression: processes usually too fast or slow, loud or silent, big or small for human perception (2011:39)". It is a move away from the anthropocentric focus of the representationalist agenda. The documentary BEAR 71 makes us acutely aware of the realm of the pine needle: a media sphere that 'passes through us', without us sensing it, let alone consciously register it. The reason is that it is not relevant to us; it is not normally a part of human affectivity, of our needs and functions.

Most interaction takes place in a three dimensional abstract depiction of Banff National Park, the wild park where Bear 71 lives. This is where we spend most of the time in the documentary. It is not so much a representation, containing information. It is a semblance of a world, bound by the frame of the screen, next bound by the borders of the park, but also virtually unlimited: it always "exceeds the artifact's actuality" (Massumi, 2011:58). Different shapes, of different color are the building blocks. We can see the towns, the road, the railway, the river. Similar abstractions of trains and cars speed along, cutting through the landscape, physically distorting surrounding shapes as they pass through it. One shape pushes the other away. To return to perception for a brief moment: what we see, or physically register, is the sensory input of one shape moving towards another and then moving back to its original location. When at its furthest point the adjacent shape begins to move. That is what we register. What we "perceptually feel" is the movement continuing into the next shape (idem:106).

The shapes are again assembled of clearly visible pixels. The mathematical shapes have a human signature, in stark contrast to the organic forms (trees, water, rocks) that they represent. We are constantly reminded of the contrast between the wild, the biological, nature on the one side and the organized, structured, cultivated on the other. The narration stresses the organic nature of the experience of Bear 71. The descriptions of her surroundings are vivid, complex and organic. They pay most attention to all sorts of smell, human beings' least dominant sense. Human activity can be felt everywhere in the park. First, we are ourselves located in the landscape and can navigate through it by moving the

mouse to wherever we chose to go. We are represented by a bright orange circle on the screen, accompanied by a label stating "Human 567022 (YOU)". Like the bear, we are not someone, we are a number. The number changes each time the documentary is reopened. When moving around the surrounding building blocks are distorted as well, though not as violently as when cars or a train passes through it. The orange circle is open, and inside it we can see the building blocks moving through us. As we move through the world, the world moves through us. A second way in which human intervention in the park can be felt is through the trail cams that we find spread out over the landscape. When selected a pop-up window will show some footage taken by that particular camera. Also, animals are moving through the landscape, represented by a similar label, either brown or black (e.g. 'Big Horn Sheep 24' or 'Bear 71'). These too can be clicked on. A window appears with observation camera footage and data about the selected animal, such as the number of this species that are present in the park, its weight and age. Other visitors to the documentary are also made visible, tagged with their own number. When clicked upon a screen opens with multiple screens, much like the surveillance camera control room we spoke about earlier.

In the top right corner we find a radar-type overview of the map, reminiscent of a mini-map in games. When selected we see an overview of the entire wildpark, divided into eleven regions. The regions have grid-like indications (A4, B3, C2, etc.). We can see the different animals and other viewers (called 'characters') moving around the park. Bear 71 is permanently highlighted, reminiscent of the way in which park rangers are able to track her at all times. The wired world, in its semblance, puts us inside the wild whilst at the same time allowing us to feel how nature, the wild world, is in conflict with human activity. It makes tangible the ecological crisis the world is faced with.

3.2 Control societies: "Some ranger playing God"

It is largely due to electronic collars that rangers know at all times where different animals are located. These collars are examples of the upcoming 'society of control'. According to Deleuze the collars replace the confinements of the prison system with a "new system of domination" (1990). In the 'disciplinary societies', located by Foucault in the

eighteenth and nineteenth centuries, individuals move from one closed environment to another, each governed by their own set of rules. These are now replaced by "free floating control". Deleuze claims that "there is no need to ask which is the toughest regime, for it it's within each of them that liberating and enslaving forces confront one another. (...) There is no need to fear or hope, but only to look for new weapons (idem)." These new weapons have to be suited though for the complexity of the society of control. To again quote from Deleuze: "the coils of a serpent are even more complex than the burrows of a molehill (idem)." The coils of a serpent refer to the free floating control we are at present increasingly facing; the burrows of a molehill are the confined spaces of the disciplinary society. In Banff National Park strategies from control society are clearly visible. It is not fenced off; there is no definite enclosed environment. The previously mentioned aversive conditioning makes it clear though that there are rules of conduct, locative limitations and consequences when boundaries are crossed. The rules and limitations are not visible and cannot be understood, at least not by a bear, but the consequences are made felt which will result in adjusted behaviour.

Surveillance, another feature of the society of control, is a recurring theme throughout the documentary. Already at the loading of the documentary we found ourselves observing multiple screens. This, the ubiquitous security cameras and the media experience in which attention is being divided between multiple screens, are both important aspects of what Shaviro calls the 'post-cinematic' media regime in which we live (67). They are part and parcel of popular culture. In watching these screens we are like Lucius Fox (played by Morgan Freeman) in THE DARK KNIGHT (2008), like Nan Rae Frost (played by Miranda Richardson) in SOUTHLAND TALES (2006), both monitoring a large curving wall with multiple screens. I did call this a 'control' room: the fact that one sees voyeuristically, without being seen and can initiate action according to what is seen gives a sense of power, as we see in Foucault's 'disciplining gaze' (1977). Being subjected to that gaze requires recognizability. When bear 71 is captured in the beginning of the documentary, the picture is carefully framed in such a way that the involved park rangers' faces are never visible. In the single shot where one of their faces is visible, the face is blurred out. The ranger maintains his status of anonymity and thus avoids the immediate control of the observer.

Paradoxically, like the bear we are also being observed. At the time when we are first presented with the three dimensional representation of Banff International Park, a window pops up. It is asking for our permission to activate the webcam (when present). There is no way to know at this moment in time what the footage recorded by the webcam will be used for. Yet our curiosity about the way in which this function will be outplayed makes it likely that permission will be given. People are like that: we freely give up our privacy and share our personal space out of curiosity and for the sake of maximized functionality of devices used. We choose yes and the eye of the camera comes alive, normally indicated by a little LED light burning. It is unclear what happens to the footage: is someone looking at me? If so; what are the rules of conduct? What is allowed and not allowed? These are the same questions that are raised when we stare in the black shimmering eye of a surveillance camera. A link with Foucault's panoptic society (1977) is easily made. Bear 71: "I suppose it's like most of the surveillance that goes on today - it's partly there to protect you, and partly to protect everybody else *from* you." We don't see the footage recorded by our webcam until we click on one of the animals roaming the park. We once again are faced with multiple screens, in a control-room like fashion. On one of the screens we now appear ourselves in real time, next to possible other human users and wildlife. We then are not only seeing, but being seen.

3.3 Interaction: a soft tyranny

There is a striking parallel between the way in which surveillance works and how interaction works. There is a sense in which we feel secure and in control when we have the ability to interact. Yet in our interactive contribution we voluntarily make data available for the system to work with and consequently for whoever is watching. This is also what Massumi claims when Arjan Mulder argues that a major motivation behind a lot of new media art is to break through the pacifying nature of modernist ideas on art. In this modernist view art is about "estrangement" and it suspends. "Interactive art is meant to take art out of its ghetto, out of the gallery, out of the frame, and into life." As a result Mulder argues, many people perceive interactivity as liberating (in Massumi, 2011:47). Massumi responds with what I consider an important point for the careful

analysis of power in interactive art and more specifically in the interactive documentary. According to Massumi there can be "a kind of tyranny to interaction". He furthers this argument by referring to Foucaults claim that the most abominable regimes of power are those that "impose an imperative to participate, particularly when the imperative is to express yourself "truly" or "authentically". You simply have to reveal yourself for who you are and you become who you are in expressing yourself."

"You are exposed down to your inmost sensitive folds, down to the very peristaltic rhythms that make you what you are. This is generative power, a power that reaches down into the soft tissue of your life, where it is just stirring, and interactively draws it out for it to become what it will be, and what it suits the system that it be." (2011:48)

So what are these 'inmost sensitive folds'? And how are we exposed through this particular live documentary? A lot of what we feel is involuntarily and can be invoked by a clever appeal to our body and senses. Quite literally we have seen this with the fear that was felt in the early stages of the documentary, and we will see more of it in the sentimentality that is evoked towards the end. More abstractly, at the level of affect, our sense of being in the virtual world lines up with the way in which Bear 71 must experience his surroundings. This is what Foucault calls bio-power: "Society's control over individuals (...) accomplished not only through consciousness or ideology but also in the body and with the body (Foucault, 2000:137)." In other words, life itself becomes the object of political strategies.

Another way in which interactivity reaches out to our 'soft tissue' is how our mental processes become externalized. In partaking in an interactive form such as BEAR 71 our previously private memory, associations, etcetera become externalized (see also: Manovich, 1995). It reminds me of what Goethe says: "I love the deep quiet in which I live and grow against the world and harvest what they cannot take from me by fire or sword" (In: Nietzsche:37). This growing and living against the world folds outward through the decisions we make in the documentary. This is not only true for a work of art such as BEAR 71; it is a feature of our online presence. The content of our search queries, emails and status updates is a reflection of our mental state of mind. It is taken from us to

be exploited commercially, not by fire or sword, but by the soothing flickering of pixels that beg to be manipulated.

Lastly, it stimulates conformity to someone else's mental structure. We already saw the way in which we think and feel with the bear. This is quite explicit through the use of the bear as voice-over commentary. This can again be described using Pisters concept of the neuro-image. We explore not just the landscape which Bear 71 roams; we simultaneously explore her brain-world, her thoughts, memories and emotions. What may be less obvious but as important is the way in which we think and feel with the artist. The different trajectories are all set out to evoke the same effect, to tell the same story. Even though there are multiple options, the trajectory we follow has always been pre-configured. "It produces its object of power interactively through its own exercise. Not just your behavior, not just your labor - your life. (...) It's a soft tyranny" (2011:48).

Realistically we have to acknowledge that power is too complex, too diffused in social reality to be reduced to a single dimension: there are no relations devoid of power. Massumi too acknowledges that "the power element is always there, at least on the horizon. You have to strategize around it (2011:49)." He then suggests that artists working with interaction should build in escapes and sinkholes. These are lacking in BEAR 71 and in that sense it is relentless and unforgiving. Twenty minutes count down and the ending of the story is unavoidable. This is again not just form following function, but form *being* function. The experience of Bear 71 is one of disempowerment, of slowly but surely moving towards her end. Here our experience lines up with hers. We were promised interaction, but in the end we can only watch in terror as the story unfolds, listen as the narrative moves on like a freight train.

Conclusion: "Interact or die! That is nature's law." (Mulder, 2010:242)

Biopower is quite literally what we see at work in BEAR 71. Towards the end of the documentary Bear 71 reflects on humans' ability to possibly bring back the extinct passenger pigeon in the future, by building artificial chromosomes out of DNA. "It's hard to know what people are capable of. They can start a revolution on a smartphone, but can't remember to close the lid on a bearproof garbage can." Our attention is drawn to our preoccupation with technology, supposedly enabling us to change the world. The irony is of course that a passenger pigeon would never have become extinct if it wasn't for excessive hunting and habitat destruction.[12] Bringing a passenger pigeon back to life is only necessary now that people have made it extinct. Likewise, revolutions are needed to solve problems we created ourselves in the first place. The documentary BEAR 71 makes us aware that there is a time when we are still able to alter history by simply closing the lid on a garbage can: by thinking, feeling and acting with our immediate surroundings. Instead we try to maintain control over life itself.

Similar observations are made by recent biological studies. The small, seemingly insignificant changes people bring about in nature appear to have great ecological consequences. For example combined research showed that the decline in manta rays in a remote section of the Pacific could be deduced to anthropogenic activity, namely replacing native trees with human propagated palm trees. The birds roosting on the native trees fertilized the soil and by doing so increased nutrition in coastal waters which resulted in an abundance of plankton, which is the main food supply for manta rays (McCauley et al, 2012). Ecologically the world is in crisis. Looking for solutions we must posit ourselves in the world, rather than over and against it. We must (re?)learn to think and feel with the world that cannot be divided into neatly defined areas of scientific research. The boundaries between the humanities, social studies and exact sciences must be crossed and eventually erased. This is what Guattari calls thinking 'transversally' (1989:135). According to him "the

---

[12] In the nineteenth century passenger pigeons were one of the most common birds in the world. In the early twentieth century the supposedly last passenger pigeon, called Martha, died in the Cincinnati Zoo (source: wikipedia).

maintenance of natural equilibria will be dependent upon human intervention (idem:146)." Our intervention must pay great attention to detail now that we are aware that the tiniest changes can have enormous effects. Our interacting with our surroundings must be thought through from the point of immanent relation. The consequences if we do not intervene might very well be catastrophic. As Bear 71 puts it: "Things that are unstoppable are a problem when you need them to stop."

On the sixth of June, 2009, Bear 71 and her cub were eating grain on the railway. Taken by surprise by a freight train, she instinctively charged to protect her cub. Her final act was an act of rebellion, she did what comes naturally. For every five miles of railway in the park a bear has been killed by a train collision. Despite the rangers' best intentions to preserve the wild as well as protect the visiting tourists the story ends badly. It shows that power lies not with an institution, or an individual. It is as free floating as was argued earlier. We created machines that are more powerful than ourselves. Our control over them is at best limited and delayed, at worst we no longer see through the mechanisms at work and thus unconsciously submit ourselves to their rules. When the story ends we are left in the three dimensional landscape. There is no more voice over, no more story. We can continue to roam the park and still see Bear 71's label, it is stuck at the railroad, it no longer moves.

Live documentaries are not to be judged by their measure of interactivity. Their vocation is to open up a relational architecture, not to maximize interactivity in its instrumental sense. The relation in BEAR 71 is shaped through interactive elements, but also, and perhaps more forcefully through the impossibility of intervention when it really matters. BEAR 71, through the way in which it forms relationships is best described as a diagram or rhizome. In that way we can grasp the political implications of aesthetic choices.

BEAR 71, then, is not just a documentary about a bear. It takes the whole processual, relational dynamic as its object. In some ways we do think and feel with the bear, but at the same time it is a documentary about the park rangers and conservationists. We experience the impossibility of their mission, which is to paradoxically conserve the wild. We see what they see, the footage of surveillance cameras, the position of animals. We too for a moment felt in control, only to arrive at the end

disillusioned. It is ultimately a documentary about us. When understood relationally interactive documentaries are freed to no longer be about an object, objectivity is no longer their azeotropic constituent. What BEAR 71 does is bring forward our longing for the wild but paradoxically ruining it through our attempts to be a part of it. It is about us living in an upcoming society of control, still learning its rules, forging our weapons to engage the new forms of power. It is about the blurring boundaries between us and technology and how this process cannot be stopped. There is a paradox between this blurring of boundaries and at the same time the violent clash between nature and culture. BEAR 71 then is also about the ecological crisis planet earth is in; A crisis that can only be solved by thinking transversally and relationally.

Interactive or live documentaries are not ideal artistic expressions devoid of power. There is no need to romanticize interactivity or relation for that matter. They are powerful tools for artists to make people think and feel with them and to help us think and feel with the world.

Literature

Eitzen, Dirk. "When Is a Documentary?: Documentary as a Mode of Reception." *Cinema Journal* 35:1 (1995)

Guattari, Felix. "Escaping from Language" *The Machinic Unconscious: Essays in Schizoanalysis* (1979)*.* Eds. Felix Guattari and Taylor Adkins. Los Angeles: Semiotext(e), 2011. 23-43.

Renov, Michael. "Introduction: The Truth About Non-Fiction." *Theorizing Documentary*, Ed. Michael Renov, London: Routlegde, 1993.

Aarseth, Espen. *Cybertext: Perspectives on Ergodic Literature*. Baltimore: John Hopkins University Press, 1997.

Bazin, Andre. "The Ontology of the Photographic Image." (1945) *Film Quarterly*, 13:4 (1960), 4-9.

Bergson, Henri. *Matter and Memory* (1912)*.* New York: Cosimo Inc., 2007.

Colebrook, Claire. *Understanding Deleuze*. Crows Nest: Allen & Unwin, 2002.

Critchley, Simon and William Ralph Schroeder. *A Companion to Continental Philosophy.* Oxford: Blackwell Publishing Ltd., 1999.

Deleuze, Gilles. *Cinema* (1985). London: Continuum, 2005.

Deleuze, Gilles. "Society of Control" *L'autre Journal*, no.1, May (1990).

Deleuze, Gilles and Felix Guattari. *A Thousand Plateaus* (1980). London: Continuum, 2004.

Deleuze, Gilles and Felix Guattari. *Anti-Oedipus* (1972). London: Continuum, 2004.

Dolphijn, Rick. "How Austin moves us away from Lacan" Unpublished article.

Foucault, Michel. *Discipline and punish: the birth of the prison*. New York: Pantheon Books, 1977.

Foucault, Michel. "The birth of Social Medicine" *Essential Works III*. New York: The New Press, 2000.

Gaudenzi, Sandra. Working Title "Interactive Documentary: Towards an Aesthetic of the Multiple." Unpublished Promotional Thesis. Version may 2012.

Guattari, Felix. "The Three Ecologies." *New Formations*, no. 8 (1989).

Godoy, Hélio. "Documentary realism, sampling theory and Peircean Semiotics: electronic audiovisual signs (analog or digital) as indexes of reality." *Doc On-line*, no. 2, July (2007)
107-117.

Hall, Stuart. "The West and the Rest: Discourse and Power", in Stuart Hall and Bram Gieben, eds. *Formations of Modernity*. Open University/Polity Press, 1992. 275-331

Lenoir, Tim. "Haptic Vision: Computation, Media, and Embodiment in Mark Hansen's New Phenomenology." In *New Philosophy for New Media*. Mark Hansen. London: MIT Press, 2006. xiii-xxviii

Manovich, Lev. "From the Externalization of the Psyche to the Impantation of Technology." *Mind Revolution: Interface Brain/Computer* ed. Florian Rštzer. Munchen: Akademie Zum Dritten Jahrtausend, 1995. 90-100

Massumi, Brian. "Fear (The Spectrum Said)" *Positions* 13:1. Duke University Press (2005).

Massumi, Brian. *Semblance and Event: Activist Philosophy and the Occurrent Arts*. London: The MIT Press, 2011.

Merleau-Ponty, Maurice. *Phenomenology of Perception.* London: Routledge, 1962.

Metz, Christian. *Essays sur la Signification au Cinéma*. Paris: Klincksieck, 1968.

Mulder, Arjen. *From Image to Interaction*. Rotterdam: V2 Publishing, 2010.

Douglas J. McCauley, Paul A. DeSalles, Hillary S. Young, Robert B. Dunbar, Rodolfo Dirzo, Matthew M. Mills, Fiorenza Micheli. "From Wing to Wing: The Persistence of Long Ecological Interaction Chains in less-disturbed Ecosystems." *Scientific Reports* 2:409 May (2012).

Nichols, Bill. "Getting to Know You...": Knowledge, Power, and the Body" *Theorizing Documentary*, ed. Michael Renov, 1-11. London: Routlegde, 1993.

Nichols, Bill. *Introduction to Documentary*, Bloomington: Indiana University Press, 2001.

Nietzsche, Friedrich. *Man Alone with Himself*. London: Penguin Books, 2008.

Odin, Roger. *Les Espaces de Communication: Introduction á la sémio-pragmatique.* Grenoble : Presses Universitaires de Grenoble, 2011.

Olivieri, Domitilla. *Haunted by Reality: Towards a Feminist Study of Documentary Film.* Promotional thesis as presented to the committee on 10 february 2012.

Pisters, Patricia. *The Neuro-Image: A Deleuzian Film Philosophy of Digital Screen Culture*. Stanford: Stanford University Press, 2012.

Pisters, Patricia. "Synaptic Signals: Time Travelling Through the Brain in the Neuro-Image" *Deleuze Studies* 5:2. Edingburgh University Press (2011).

Rodowick, *the Virtual life of film.* Harvard: Harvard University Press, 2007.

Searle, John R. "The Logical Status of Fictional Discourse." *New Literary History* 6:2 (1975).

Spivak, Gayatri Chakravorty. *A Critique of Postcolonial Reason: Toward a History*
of the Vanishing Present. Cambridge: Harvard University Press, 1999.

Winston, Brian. "The Documentary Film as Scientific Inscription." *Theorizing Documentary*, ed. Michael Renov, London: Routledge, 1993.

Appendix: synopsis of **BEAR 71**

BEAR 71 tells the story of a Bear living in Banff National Park, a wild park in the Canadian Rocky Mountains. The park is visited by approximately five million tourists every year. Also a major highway and railway cut right across the park. As a result this particular park is the place where grizzly bears and humans live closer together than anywhere else in the world. The story is told by a voice-over that recounts the story from the first person perspective of this bear tagged with number 71. It tells about its capture, how it is confronted with human activity practically every day and the challenges that it must face. From hunting to moving around to raising cubs; everything is more difficult with human activity in its close proximity. It also recounts how the park rangers and nature conservationist try to maintain a healthy balance between protecting the wildlife in the park as well as making it into an attractive tourist destination. In the end Bear 71 is killed by a freight train, leaving behind a premature cub unable to look after itself.

As the story unfolds the viewer is faced with an abstract depiction of Banff National Park; kind of like a three dimensional map. By using keyboard or mouse the viewer is able to navigate through the park. Different elements are interactive, such as trail cams, animals roaming the park and other human visitors. When clicked on information is shown, or a short video clip of that particular trail cam or about that particular animal. A few times during the documentary the interactive element is interrupted by a short video that illustrates the part of the story that is being told simultaneously. When the story is over the viewer can continue to explore the park, decide to replay the story or close the internet browser.