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Portable Objects at the Museum

Center for Experience Research, Roskilde University forms the institutional background for the thesis.

Center for Experience Research is a collaboration between Department of Communication, Business and Information Technologies (CBIT) and Department of Environmental, Social and Spatial Change (ENSPAC), Roskilde University.

Center for Experience Research builds knowledge about the various branches of the experience economy, its firms and the production of experiences. The research center is multi-disciplinary, and as such combines approaches from within Humanities, Social Sciences and Technical and Natural Sciences.

Experience economy encompasses culture and media, design, computer games, internet based experiences, mobile technologies and events, and includes phenomena, which are traditionally categorized as tourism, leisure, creative industries, culture and business, and performance design. In this broad understanding, experience economy is ascribed 7-8% of the Danish economy.

Portable Objects at the Museum

PhD Thesis
June 15th 2010

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Roskilde University
ENSPAC - Department of Environmental, Social and Spatial Change
Doctoral Research Programme on Society, Space and Technology
Supervisor: Jørgen Ole Bærenholdt

2. print

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The gull skeleton bounces lively
in the boy's hand: Look what I found!
Look, what *I* found, the skeleton mumbles
and runs off with the boy.

Eske Mathiesen
poem from *Herbarium*
my translation, the original reads

Mågeskelettet fjedrer livligt
i drengens hånd: Se hvad jeg fandt!
Se, hvad jeg *fandt, mumler skelettet*
og løber videre med drengen.

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That is what a museum is.

Abstract

Museum visits are mediated by portable objects. At the museum of natural history, Naturama in Svendborg, Denmark, children encounter the exhibition with three kinds of portable objects: mobile phone cameras, exercise pamphlets and animal costumes. These objects act as mediators which both relate and transform the visitor and the exhibition, and thus drastically shape the visit. Within moments, children shift from growling brown bears to task-solving busy-bodies moving information around.

Each portable object mediates a characteristic mode of visiting. With exercise pamphlets emerges a scholastic enactment where the exhibition is transformed into a site for finding answers and the child is a notary. With mobile phone cameras emerges a relentless gathering of pictures. The exhibition presents itself as visual images and the visitor is a photographer chasing beauty. With animal costumes, the exhibition turns into a hunting ground in an imaginary and embodied drama carried out by a playing child. The subject matter of natural history is enacted in ways which closely connect to the portable object in use. The same exhibition is enacted in multiple coexisting versions, and so is the visitor. Visitors engage with several portable objects and with this they also participate in multiple modes of visiting which they shift back and forth between. This leads to an understanding of the museum visit as consisting of multiple overlapping and interfering modes of visiting. The association of portable object, visitor and exhibition is continuously interrupted, so the museum encounter becomes a complexity of intertwined patterns of action: a morphing process of incessant appearances and disappearances. The museum visit is a flow of disturbances.

Exercise pamphlets, mobile phone cameras and animal costumes mediate a distinct mode of visiting *when* the portable object is associated to the visitor and they are in conjoint action. This conjoint action, however, is an achievement. The association may both be enforced and obstructed by other portable objects, exhibition media, exhibited objects and other aspects of the exhibition design, as well as by fellow visitors and museum staff.

The thesis builds on empirical fieldwork which is used to build rich descriptions of visitor practices. Theoretically, the analyses are inspired by actor network theory (ANT), related post-ANT studies, and their common foundation in the philosophy of Michel Serres. In accordance with the employed theoretical position, the dissertation experiments with hybrid forms of writing.

Center for oplevelsesforskning, Roskilde Universitet udgør den institutionelle ramme for afhandlingen.

Center for oplevelsesforskning er et samarbejde mellem Institut for Kommunikation, Virksomhed og Informationsteknologier (CBIT) og Institut for Miljø, Samfund og Rumlig Forandring (ENSPAC) ved Roskilde Universitet.

Center for oplevelsesforskning beskæftiger sig med oplevelsessektoren, oplevelsesvirksomheder og oplevelsesproduktion. Centret er tværvidenskabeligt og fokuserer på økonomiske, geografiske, kulturelle såvel som virksomhedsmæssige aspekter af oplevelsesøkonomien. Forskningsområdet omfatter fænomener, der også forsøges forstået under begreber som turisme, leisure, kreativ industri, kultur og business, performance design og det engelske begreb experience. Oplevelsesaktiviteterne i samfundet kan økonomisk sammenfattes som oplevelsesøkonomien. Denne omfatter f.eks. kultur og medier, turisme og forlystelser, gastronomi og caféliv, sport, arkitektur og design, computerspil, oplevelser på Internettet og mobiltelefon og events. Oplevelsesøkonomien - forstået bredt - skønnes at stå for 7-8% af den danske økonomi og dens betydning er stigende.

Bærbare besøgsteknologier på museum

Danish summary of the thesis. Afhandlingens hovedkonklusioner opsummeres på dansk og afslutningsvis skitseres den teoretiske og metodiske baggrund for afhandlingen.

Afhandlingens titel "Portable objects at the museum" kan direkte oversættes til 'bærbare genstande på museet'. Det der bæres rundt på er tre forskellige besøgsteknologier: opgavehæfter, mobiltelefonkameraer og udklædningsdragter som bruges af børn og unge der besøger det naturhistoriske museum Naturama. De tre bærbare genstande har afgørende betydning for hvordan museumsbesøget tager form. Hæfter, mobiltelefoner og dragter inspirerer hver især til en bestemt interaktion med udstillingen. De mobile, bærbare besøgsteknologier medierer museumsbesøget. De er med til at skabe en karakteristisk besøgsmodus og de både fokuserer og forvrænger den besøgendes møde med udstillingen.

Medieret besøgsmodus

Opgavehæfter skaber en besøgsmodus hvor den primære aktivitet er at løse opgaver. Besøgende går rundt med papir og pen i hånden og leder efter svar til de spørgsmål, opgavehæfterne stiller, eller de sidder eller står ved computere og løser opgaver. I denne besøgsmodus bliver udstillingen transformeret til tekst. Det er en besøgsmodus som kombinerer en skolastisk og fakta-orienteret logik med skattejagtens spændingsmoment. Udstillingen handles frem som informationsdepot, den besøgende interesserer sig for udstillingens evne til at bidrage med svar til opgavehæfterne. Opgavehæfterne er den besøgsteknologi der mest markant nyder opbakning fra museet, museumspersonalet foreslår køb af opgavehæfter til besøgende familier og skoleklasser, og hvis et udfyldt opgavehæfte indleveres ved skranken i forhallen, modtager opgaveløseren en plakat i præmie. Den besøgende bliver en pennefører der deltager i en fremvisning af biologisk og fakta-orienteret viden om de udstillede dyr, hvor det der er i fokus er hvad dyrene hedder, hvordan de ser ud, hvor de lever og hvad de spiser.

Mobiltelefonkameraer skaber en besøgsmodus hvor den primære aktivitet er at fotografere. Udstillingen bliver i denne besøgsmodus transformeret til billeder. Besøgende går rundt med deres mobiltelefoner og anvender dem som kameraer; de standser foran et dyr som de synes er smukt eller fascinerende

og tager et billede af det. Den besøgende udvælger med sit kamera, hvad der er særligt interessant i udstillingen. Den besøgende tager form som fotograf, som en besøgende der er æstetisk skabende. Tilgangen til udstillingen er visuel, æstetisk og personlig, men kan også i bogstaveligste forstand kaldes overfladisk, fokus er hvordan dyrene ser ud, ikke hvad de hedder, hvor de bor, eller hvad de spiser. Denne besøgsmodus opstår på den besøgendes eget initiativ og er således ikke foranlediget af museet.

Udklædningsdragter skaber en besøgsmodus hvor den primære aktivitet er leg. Når børn bliver klædt ud inspirerer det dem til at lege, at de er et dyr. De angriber deres medbesøgende og når flere børn er samlet, for eksempel når alle i en børnehave eller skoleklasse klæder sig ud samtidig, udvikles mere strukturerede legeaktiviteter, hvor børnene forhandler om, hvem der skal være hvad og hvordan legen skal forløbe. I denne besøgsmodus tager udstillingen form som scene, som baggrund for en dramatiseret, forestillet og kropslig aktivitet der er relateret til museets overordnede tema. Dyreudklædningsdragter fører til kropslige sammenstød, til børn der føler sig inspireret til at løbe og slås, og på grund af de forstyrrelser som dette kan give i en mere stilfærdig besøgspraksis, som består i at gå og se på dyrene, har museet ønsket at koncentrere børnedyrenes aktiviteter til et bestemt område af museet, til det der hedder Klapperummet. Det betyder, at udstillingen for disse børnedyr forskydes, den flyttes ind i et lokale som grænser op til udstillingen, men som ikke er selve udstillingen. Udstillingen transformeres til et afgrænset legested.

Hver af de tre bærbare besøgsteknologier er med til at skabe en karakteristisk besøgsmodus: en bestemt form for aktivitet, en bestemt tilgang til udstillingen og en bestemt version af den besøgende. Alt efter hvilken medierende genstand der er i spil, krænges udstillingen over i en ny form. Udstillingen antager en flertydig karakter, den kan både strækkes til at være tekst-depot, foto-shoot og naturreservat og den besøgende kan både antage karakter af penneFører, fotograf og legende dyr.

Bærbar interaktivitet

Dét, som de bærbare teknologier tilbyder den besøgende, er mobil interaktivitet. Set fra børnenes perspektiv er der forskellige drivkræfter for deres engagement i hver af de tre medierende genstande. Børnene engagerer sig i løsning af opgavehæfter fordi de synes det er sjovt, fordi de kan få en præmie for det og fordi deres forældre og lærere opfordrer dem til det. Mobiltelefonerne får deres kraft af det tætte forhold der er mellem den besøgende og telefonen, allerede når de

ankommer til museet. Mobiltelefonen er klar i lommen og det at fotografere eksisterer som en stærk allestedsnærværende trang. Udklædning foregår både på børnenes eget initiativ og på opfordring fra medbesøgende, og en væsentlig drivkraft for børnene er, at de har mulighed for at træde i karakter på en ny måde, de kan opføre sig dyrisk, de kan lege, og det er sjovt.

Alle tre bærbare medierende genstande tilbyder den besøgende aktiviteter som indebærer en kropslig gøren. Med de bærbare besøgsteknologier får den besøgende et adgangspunkt til udstillingen, hvor den besøgende sanser udstillingen ved at kunne mærke den, holde den i hånden, være klædt i den: ved at være engageret på en måde hvor krop, bevidsthed, sansning, mediering og udstilling flyder sammen.

Besøgsteknologier i sociomateriel forhandling

At de bærbare besøgsteknologier er med til at skabe en karakteristisk besøgsmodus betyder ikke, at de styrer museumsbesøget. Det gør de ikke. De forhandler om hvordan museumsbesøget skal forløbe med en lang række andre aktører. Museumsbesøget er en sammenfiltring af en række sociale og materielle enheder. Besøgende, opgavehæfter, mobiltelefoner, udklædningsdragter, computere, skilte, plakater, udstillingsgenstande, guidede rundvisinger og arkitektur er alt sammen i komplekst samspil. Set fra de bærbare besøgsteknologiers perspektiv er målet at komme i aktion; at komme til at handle sammen med den besøgende, men det at blive *samhandlende*, at den bærbare besøgsteknologi og den besøgende associeres og sammen interagerer med udstillingen, er en begivenhed som møder vanskeligheder på vejen. At løse opgaver i et hæfte kan for eksempel blive kraftigt modarbejdet af besøgsfæller; en bedstemor der bestemt ikke synes, at det at blive dirigeret rundt af et hæfte er den rigtige måde at opleve et museum, eller en far der bliver så træt af den påvirkning hæftet udøver på hans datter, at han ønsker hæftet hen hvor peberet gror. Det at blive samhandlende er en begivenhed. Men *når* bærbare genstande, besøgende og udstilling associeres bliver en karakteristisk besøgsmodus handlet frem: hver besøgsteknologi skaber en særlig medieret besøgspraksis.

Overlap, forstyrrelse og forstærkning

De tre forskellige medierede besøgsmodi sameksisterer, de overlapper og ind imellem forstyrrer de også hinanden. Et barn som bærer en dyreudklædningsdragt bliver pludselig optaget af et opgavehæfte. Selvom barnet stadig bærer udklædningsdragten er det ikke længere denne besøgsmodus der er i spil. Barnet

skifter fra at være et dyr til at være et barn der løser opgaver. På denne måde bliver museumsbesøget til et forløb af samhandlinger og forstyrrelser, hvor den ene besøgsmodus skubber til og afløser den næste. Den besøgende skifter mellem forskellige besøgsmodi og dermed også mellem forskellige versioner af udstillingen – og mellem forskellige versioner af sig selv.

De tre medierede besøgsmodi interagerer også med andre måder at besøge museet på. For eksempel forstyrrer mobiltelefonen guidede rundvisninger. Mobiltelefonkameraer tager opmærksomheden fra den guidede tur i en sådan grad, at guiderne på museet er kommet frem til, at det er nødvendigt at begrænse fotografi under rundvisninger ved at bede besøgende om at beholde deres mobiltelefon i lommen så længe rundvisningen varer. Mobiltelefonens medierede besøgsmodus er i karambolage med den besøgsmodus en guidet rundvisning består af. Et andet eksempel på, at en medieret besøgsmodus skaber forstyrrelse, er den kollision der opstår når børn klædt i dyreudklædningsdragter støder ind i besøgende der stille og roligt går rundt i udstillingen.

Det er ikke sådan at de bærbare, medierende genstande udelukkende griber forstyrrende ind i museets øvrige formidlingspraksisser. Mobile, bærbare besøgsteknologier kan både forstærke og forstyrre hinanden og andre medierende teknologier. For eksempel er opgavehæfter og udstillingscomputere tæt sammenvævede. Opgavehæfter refererer til udstillingscomputere: information som skal bruges for at løse opgaverne kan findes på computerne. Opgavehæfterne forstærker på denne måde udstillingscomputerne, de gør computerne relevante for den besøgende, og omvendt fodrer computerne de besøgende med information, som de kan fylde over i opgavehæfterne. Opgavehæfter og computere er to medierende teknologier der forstærker hinanden. Den ene er mobil, den anden er stationær.

Museumsbesøget er et mønster af forstyrrelser

Samspillet mellem bærbare genstande, besøgende og udstilling bliver til en lang række associeringer og dissocieringer, sammenkoblinger og frakoblinger. Når en besøgende er i interaktion med en besøgsteknologi flyder disse sammen i en bestemt besøgsmodus. Når den besøgende skifter til en anden besøgsteknologi skifter besøget også karakter, både den besøgende og udstillingen træder frem i en ny version. Det vil sige, at museumsbesøget er en lang række af skift, det antager karakter af forstyrrelsesmønstre, en slags flydende turbulens. Et museumsbesøg er et mønster af kontinuert omskiftning mellem en række forskellige sociomaterielle engagementer. Et mønster hvor relationer etableres og brydes,

igen og igen. Bærbare medierende genstande distraherer fra udstillingsgenstande, udstillingsgenstande distraherer fra hinanden, bærbare genstande hiver brugere hen til udstillingscomputere, men hiver dem også væk igen, besøgende ignorerer medier, bliver optaget af noget og så af noget andet, medbesøgende trækker måske igen de bærbare genstande ind i billedet. Museumsbesøget er en fortløbende sociomateriel forhandling.

Museumsbesøget er et forløb der opstår ud af et hav af bevægelse og interaktion. Besøget er en slags orden der vokser ud af en lang række ældtende og brydende bevægelser, et mønster som vokser ud af uorden, virvar og virak. Besøget opstår som en specifik orden der vokser ud af en række interagerende medieringer, og det gør museumsbesøget til en hvirvlende orden, en orden af det pludselige og det uforudsigelige.

Metodisk og teoretisk baggrund

Afhandlingen bygger på kvalitativ, empirisk forskning i form af etnografisk feltarbejde. Målet med afhandlingen er at give mættede, righoldige beskrivelser af hvordan besøgende og udstilling handles frem i en række konkrete møder på det naturhistoriske museum Naturama. Afhandlingen viser hvordan museumsbesøg udspiller sig i praksis og hvordan bærbare besøgsteknologier spiller ind i denne praksis. Udgangspunktet for afhandlingen er en interesse i, hvad besøgende gør, når de er på museum og hvordan det sociale og det materielle spiller sammen i en række konkrete museumsbesøg.

Naturama

Feltarbejdet er gennemført over 14 måneder på det moderne naturhistoriske museum Naturama. Museet er det tidligere Svendborg Zoologiske Museum, etableret i 1935, ombygget og genåbnet som Naturama i 2005. Museets navn kommer af en kombination af natur og drama og dette er ledetråden for de oplevelser museet ønsker at tilbyde de besøgende. I 2009 havde Naturama 65.509 gæster og museet har oplevet stabilt stigende besøgstal siden genåbningen. Lidt over halvdelen af de besøgende er børn og unge under 18.

Udbredt brug af besøgsteknologier

De tre bærbare besøgsteknologier er fokus for afhandlingen, fordi de er fremherskende i besøgspraksis. De er i udbredt brug på museet hver dag. For eksempel

var der i 2009 små 9000 opgavehæfter i cirkulation. Det vil sige, at omtrent en tredjedel af besøgende børn har et opgavehæfte med, når de går rundt på museet, og andelen af besøgende som interagerer med opgavehæftet er faktisk større endnu, idet det er sjældent, at et barn løser et opgavehæfte alene. Mobiltelefoner er allestedsnærværende. 94 procent af 9-16 årige danske børn/unge har en mobiltelefon - og de tager den også med på museum. Brugen af dyreudklædningsdragter er ikke kvantificeret, men de er i flittig brug på museet.

Børn fra 3 til 13 år samt besøgsfæller

Afhandlingen fokuserer på de tre bærbare besøgsteknologier, og dette er med til at skabe et fokus på børn og unge i alderen fra omtrent 3 til 13 år, samt deres besøgsfæller på både familie- og institutionsbesøg. Det er primært denne gruppe af besøgende, der bruger de bærbare genstande, men besøgsteknologierne præger ikke kun museumsbesøget for den der bærer teknologien, men også for besøgsfællerne. Når et barn eller en ung besøgende oplever museet med en bærbar medierende genstand, så påvirker det også medfølgende søskende og voksne besøgsfæller, og nogle gange på institutionsbesøg er der nærmest bølger af medierede interaktioner i gang hvor en hel klasse stormer rundt og tager billeder med deres mobiltelefoner, klæder sig ud som dyr, eller arbejder sammen om at løse opgaver.

Teori: post-ANT

Teoretisk er afhandlingen inspireret af aktørnetværksteori (ANT) og post-aktørnetværksteori - en relationel sociologi der fokuserer på, hvordan handling opstår i forbindelser mellem heterogene enheder, for eksempel en bærbar besøgsteknologi, besøgende og udstilling. De skribenter hvis arbejde afhandlingen trækker på er Bruno Latour, John Law, Annemarie Mol, Mike Michael og Michel Serres. Den teoretisk filosofiske position der er grundlaget for afhandlingen er Michel Serres' medieringsontologi.

I konklusionen, kapitel 11, findes en liste med ideer til museets brug af bærbare besøgsteknologier, som er inspireret af afhandlingens teoretiske tilgang samt analyser.

1
Introduction

The introduction sketches out that the thesis is about intertwined visitors, portable objects and a museum exhibition and the thesis is argued as being relevant as a practice study of mediated museum experiences. The chapter ends with an outline of the thesis.

What this thesis aims to do is very simple. It wants to describe a series of specific intertwinings of the human and the nonhuman in a limited number of museum visits. At Naturama, a modern museum of natural history located in Svendborg, on the island of Fyn in southern Denmark, visitors encounter the permanent exhibition with three types of portable objects: exercise pamphlets, mobile phone cameras and animal costumes.

Content: what the thesis is about

Visitors with exercise pamphlets encounter the exhibition by answering questions about biology. Pamphlets are sold by the museum, and children are given a prize poster when they hand in a completed exercise pamphlet. Pamphlets are used during school visits and by families. Although the pamphlets are targeted at children, solving exercises is usually a collaborative act, where several visitors are engaged in using one pamphlet. During family visits, solving exercises is frequently a cross-generational activity.

Mobile phone interactions occur on the initiative of the visitor. Visitors bring mobile phones along with them to the museum and particularly older children and pre-teenagers frequently use their mobile phones to take pictures of the exhibition. Mobile phone cameras are used during both family and school visits. Mobile phone camera usage is permitted by the museum, but does not form part of organized museum communication.

Animal costumes which the museum puts at the disposal of visitors are particularly used by children of pre-school and primary school ages, and are both used during family and school visits. Children dress up in costumes and play

around while wearing them. When groups of children are together structured play activities emerge. During family visits children prance around and enjoy being non-human animals and being looked at while doing so. Sometimes parents or other fellow visitors take pictures of the animal children.

When exhibition visitors are engaged with portable objects, characteristic modes of action emerge. Each portable object has a corresponding pattern of interaction, and in the emerging enactments both the visitor and the exhibition assume characteristics which are co-constituted by the portable object. Furthermore, some visitors engage with various portable objects and intermittently switch between them. During a visit a child may be an animal, take pictures, and solve exercises, and thus participate in various enactments and easily shift between these. The visitor participates in multiple and shifting associations.

The goal of this thesis is to comprehend the multiple associations which emerge between the three portable objects, visitors and the exhibition, and how these associations relate. The question which the thesis seeks to answer is:

How are portable objects, visitors and the exhibition associated at Naturama?

The thesis is occupied with interaction as it takes place in practice. It inquires into the relations which are stretched out between material objects, human subjects and a site, and it explores these relations as they are patterned out in action. The visitors which are involved in the analyzed interactions are both children and adults. Children play a central role, because they often are the ones carrying the portable objects, but most commonly adults in one way or other are also involved in the interactions.

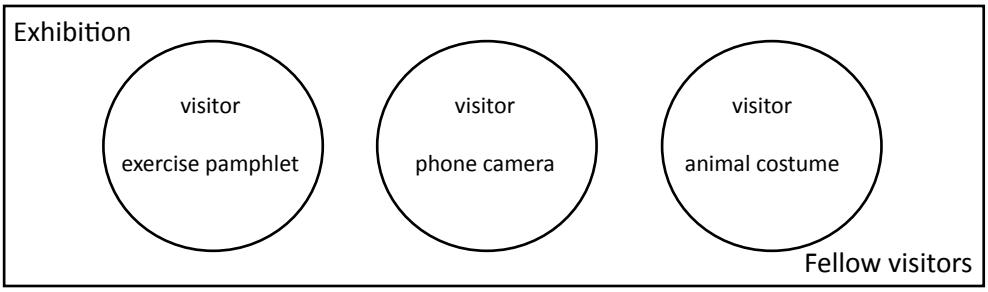


Figure 1. Associations. *The relations between visitors, portable objects and exhibition are explored as they emerge in multiple coexisting enactments*

The museum visit consists of a series of interactions with material objects, some of these interactions are brief, the visitor passes by an exhibit, looks at it, and moves on. Other interactions are less fleeting. The visitor carries a portable object, perhaps during the whole visit. It is not an exhibition object, but a mediator, a companion. These portable objects affect the museum visit. They pull it in specific directions and tone it in certain ways.

Do these objects determine what visitors do? Do they change visitors into preprogrammed machines? Horses with blinkers?

No.

It is imperative to develop an understanding which is sensitive to the shifting configurations which visitors participate in, to develop an understanding of the subject-object constellation which is sensitive to fluidity, overlap, shift and multiplicity, and to do so in a manner which is not socially or technically determinist in nature. Visitors are not turned into horses with blinkers, but the analyses presented here are not human-centered either. The analyses do not tell the individual stories of five, six or seven visitors. Visitor stories are told, but within a logic where objects are given primary roles, the portable objects are the cases, so to speak. Things do not determine human action, but they do participate in action. *Action* becomes a surprise to be explored, it becomes an event, and this tags along with a further number of questions which supplement the primary question of how portable objects, visitors and the exhibition associate. How does conjoint action emerge? What happens to the visitor and the exhibition in these enactments? How do the multiple enactments relate and how is the exhibition stretched to fit multiple enactments?

Relevance: why is this significant?

Understanding the role of portable objects in museums provides knowledge about a central but overlooked aspect of how visitors encounter an exhibition and thus about museum experiences. The literature review in chapter three shows that contemporary museum studies only sporadically reflect on the participation of portable objects in museum visitor experiences. Within the museum literature, I have not come across much research on costumes or pamphlets, and if such objects are mentioned, they are either not studied as aspects of visitor's encounters with the museum or are treated as marginal props (Reynolds 1998; Tyson 2008). Regarding mobile phone cameras, there is a small and growing body of literature on digital media in the museum which tends to advocate for the use of new media, but there are not many studies of these media in actual visitor practices (Falk &

Dierking 2008). In research on children and their everyday use of mixed media, Ito mentions this as typical; new technologies are touted with high expectations and then fall from grace when they do not deliver wonders (Ito 2008).

The use of portable objects is under-researched, but nevertheless a certain category of portable objects receive substantial attention in contemporary museum politics and practice; namely digital handheld devices. Digital media are surrounded by an aura of expectation in terms of the contribution they can make to user-oriented museum communication. This at least is the case in the Danish government publication *Digital museum communication from a user perspective* ('Digital museumsformidling i brugerperspektiv', KUAS 2009). There are hopes and expectations that digital media may make museums more interesting for the public. Museums experiment with engaging visitors with virtual exhibitions, computer games, personal digital assistants (PDAs), and the latest example which I heard on the news in the spring of 2010: Nintendo Wii.

The present study does not explicitly focus on digital media, but it deals with digital media, and it engages with topics which are relevant for digital media. The study unfolds interactions between users and various forms of media and the interplay between these digital and non-digital media. A striking fact seen from visitor practices at Naturama is that one of the so-called promising digital media, the PDA, is systematically ignored by visitors. It is not used even though it is available at the museum and even though the museum has developed applications for it. Numerous PDAs are lined up at the museum's front desk, utterly inactive. The same applies for another technological device, the audio guide. It is hardly ever used by visitors. For comparison, the mundane technology of a printed pamphlet can create ripples of action in the exhibition. In a competition for visitors exercise pamphlets, animal costumes and mobile phones out conquer the PDA and the audio guide by yards, the PDA hasn't even gotten out of the starting block when the pamphlet is racing through the exhibition. Visitors see other visitors with pamphlets, and they want them too, and suddenly everyone has a pamphlet and is solving exercises - exercises which, by the way, often refer to exhibition computers, *information kiosks*, and thus in a distributed sense are digital although the pamphlets themselves are not. This echoes a point Ito makes about digital technologies; these should not be understood in terms of being 'new', but rather in terms of convergence: old and new media intersect and overlap (Ito 2008).

Why do some media obtain the status of being in circulation, while others don't? Under which circumstances do portable objects get a piece of the action? The last question will be explored for each of the three portable objects which

this thesis focuses on; exercise pamphlets, mobile phone cameras and animal costumes. The first question is not addressed analytically, but some reflection is possible: Judging from the portable objects which *are* in circulation, there are some basic things that they have, which PDAs and audio guides do not. They are easy to use and they may be used socially, in interaction with other visitors. Mobile phones are easy to use and socially compatible, animal costumes create imaginative playful interactions, and exercise pamphlets can be a common focus for families visiting a museum. This affirms that museum visits fundamentally are social experiences (Falk & Dierking 1992).

Portable objects are a new kind of interactivity

A recurrent theme in the museum literature, which relates to the present inquiry, is interactivity. Interactivity usually has a form where the visitor engages in activities of 'touch and do' with a museum exhibit (Macdonald 2002). This interactivity, although engaging, is often a rather stationary activity. In contrast, portable objects are… portable. They have this advantage of being a *mobile touch and do interactivity*. They come with a sense of mobility and with this they allow the visitor to not only be a pair of hands and a mind engaged at one location, or a pair of eyes and ears which walk through the exhibition, but a more extensive body doing the exhibition. Portable objects mediate an interactive *and* mobile encounter with the exhibition. This means that the visitor is engaged for a much longer time than with the occasional interactive exhibit or stationary medium. And this is a good thing, at least if the, perhaps too simple, equation is interactivity = good. Portable objects follow the visitor around, they are portable interactivities which assume roles ranging from museum guide to best friend to playmate. They are loyal; they tag along where the visitor wants to go. They are flexible; they can be used or ignored at the wish and command of the visitor. They are leisurely; they don't ask the visitor to be quiet, pay attention, stand still or stop talking. They are convenient and easy to use. They are mundane, everyday technologies which transport interactivity and mediate encounters with an exhibition space, and pamphlets and costumes are actually so mundane that they hardly are considered technologies.

The museum exhibition may be seen as a space which users encounter with portable media and as such it is conceptually related to other mediated or hybrid spaces. Information and communication technologies increasingly crawl away from the desk top and infiltrate the remaining parts of the physical world. Mobile phones are omnipresent, global positioning system (GPS) technologies

have changed what it is like to move in unknown terrain, and these technologies combined with pervasive on-line access provide multiple hybrid spaces which may be layered on top of a physical place. An example of this from a leisure practice is a hybrid reality game where virtual creatures are spread out across an urban landscape, and users both track and catch them with their location sensitive mobile phones (Silva 2006). Exploring how portable objects participate in visitors' encounters with an exhibition relates to themes such as pervasive computing, location sensitive computing, ambient intelligence and augmented, mixed and hybrid realities.

Digital portable media hold the possibility of extending the museum domain not only to a virtual reality (which many museums currently are doing), but also to an augmented, mixed or hybrid reality which goes beyond the museums' physical boundaries, where the museum can extend its physical domain to the urban or natural landscape. Would it be an idea for a museum of natural history to organize mixed reality hunting expeditions, for example?

Portable objects – digital or not – hold possibilities for layering new, and perhaps also interesting and inspiring experience spaces on top of existing material landscapes ranging from museum exhibitions to urban sites, nature parks, or junk yards. In this sense portable objects offer interesting possibilities for museum professionals. They highlight the possibility for staging existing exhibitions in various ways. Exercise pamphlets and related mundane technologies such as folders and brochures are in no way a new thing. But what perhaps has a touch of novelty is reframing these mundane technologies, using their textual, visual and performative potential in multiple ways and experimenting with not only staging a conventional, old-school curatorial account of exhibited objects, but staging the objects in various ways, including aesthetically, dramatically and mythically, and perhaps linking this staging to digital technologies. There are numerous underdeveloped spaces in the relations between a permanent exhibition and portable objects - spaces which museum professionals may fully step into. Some of their visitors are already there.

Practice orientation (I): It is important to study visitor experiences

Visitor studies is an area of research which has emerged since the 1980s, and which ties in with a growing pressure on museums to focus on the public, and the point of view that a fundamental reason of existence for museums is communication with the public. The growing attention towards the visitor experience has occurred alongside mutually enforcing developments of 'new museology' where

museums are seen as potential catalysts of social and cultural change. Museums are put under pressure to redefine their role from being collection-oriented to displaying objects to communicate; and thus being more oriented towards the public, not least because public money spent on museums comes from public taxes (Reeve & Woollard 2006; Hooper-Greenhill 1994).

In the past decade this orientation towards the public has been further accentuated by interests gathered around the term 'the experience economy', which encompasses culture and media, design, computer games, internet based experiences, mobile technologies and events, and includes phenomena, which traditionally are categorized as leisure, tourism, creative industries and culture. Politically museums have been related to the experience economy in a way where it is stressed that museums should take inspiration from other experience providers. Museums are faced with competition from amusement parks, zoos, and other leisure sites. For this reason and due to increased stakeholder pressure for museums to be customer-oriented, visitor experiences are crucial to museums today. Thinking of museums and museum visitors in terms of consumerism and competition is a new thing in a Danish context (Skot-Hansen 2008).

Many museums are fantastic places to go as a visitor. Museums make artifacts accessible which otherwise would not be for public viewing. They provide access to Tut Ankh Amon's impressive golden mask, an original Picasso, or the overwhelming size of a two ton whale skeleton. They are great places for family outings and other social activities. They are intermissions, pauses, breaks in sometimes hectic everyday lives, and are common points of focus during vacations. They are public spaces devoted to general education and inspiration. Compared to many other leisure sites they are somewhat non-commercial at least in the sense that once the entrance fee is paid, if there is such, the main experience is not about spending money, but about seeing something which from either a natural, historical, scientific, cultural or aesthetic perspective is out of the ordinary. As modern places for reverence museums have been compared to churches, and this is not without reason. Museums may provide absorption, inspiration and enjoyment - of course, the contrary may also be the case. Museums may have lousy cafeterias, no place to change a diaper, or odd opening hours, and last but not least they may be an uninspiring gathering of objects which do not communicate to the visitor. Objects, and in a broader sense the museum theme, do not speak for themselves, they depend on being bridged to the visitor. This is pointed out by museum scholar Eilean Hooper-Greenhill when she writes: "Objects do not speak for themselves. There is no necessary correspondence between meaning and

artifact – no essential meaning, no single signification." (Hooper-Greenhill 2006a: 236). A central challenge for museums is to communicate to and with the public. This makes it necessary to take the visitor experience into account. A common way to obtain information about how an exhibition works in practice is to ask for visitor responses in the form of questionnaires. This is done at Naturama, and is an important source of feedback from visitors. Another crucial way is to use the information which staff who meet visitors pick up. Guides and front personnel get substantial amounts of feedback and if an organization can get this feedback into circulation it holds input which may be used for further exhibition development. A third way which is related to the everyday ethnographies carried out by guides and front personnel is the kind of ethnography which is presented in this thesis. The purpose of this ethnography is to highlight user practices and to draw attention to specific aspects of user practices, either because they are particularly interesting, overlooked in theory or practice, or both. The kind of in-depth qualitative understanding which this ethnography generates helps build a complex and multifaceted understanding of what museum visitors actually do with an exhibition and may indicate directions for the further development of visitor-centered exhibitions, also taking the role of various portable media into consideration. Researching visitor practices and portable objects is to the benefit of museum visitors, museum professionals and other leisure, experience and educational sites.

Practice orientation(II): Design value is created by users

Contemporary design research points out that design value is created in practice, by users. This argument is well developed in study areas such as user-centred design and participatory design, as well as in research on art, architecture and design which focuses on site-specificity and performance (Boztepe 2009; Ehn 1993, Ehn & Kyng 1991; Kaye 2000; Kwon 2004; Rendell 2006; J. Simonsen 2009). It is essential to include the dimension of everyday practice in the understanding of design objects and spaces. An exhibition is a design which is conceived to communicate in specific ways, to achieve specific goals in relation to visitors. Museums and other leisure, tourist or experience sites create a material landscape and a constellation of objects and media which have the job of delivering messages, entertainment, education and inspiration. These sites are attempted designed as experience creating places and they are attempted maintained as such. The design has to be cared for continuously, exhibits must be dusted, finger smears washed away, burst light bulbs fixed, and faded signs replaced. All of this inten-

tion and effort of designing, organizing, communicating and maintaining lies at the mercy of the visitor. That is an existential premise for design. It depends on being used and on how it is used. It is judged in practice.

Design is a point of connection between designers, managers, organizers and users. It becomes a gathering where multiple users mingle. Everyday users meet up - most often the designer has already left the party - so everyday users, professional and leisure users, stand around and relate to the design. How is the design used in everyday life? Does it work? How does it work? These questions focus not on the work of designers. They address design in practice, where practice is equal to user practices. How a design is used in practice to a large extent is beyond the power of the designer or organizational sender, and may be a big surprise. Designs may be used in ways which designers had never foreseen or do not want. Users do not always do what designers or organizers envision. A good example of this is how skateboarders use urban sites as places for making advanced skateboard slides, and in the process demolish expensive corporate marble and soft wooden banisters (Borden 2001).

Designers and organizers can learn a great deal by looking at how a design is used in practice. In this perspective design management can be an important angle at communication with users, an important source for picking up on user-innovations, and as mentioned an important source of feedback to react upon. Such inquiries move the focus from the perspective of the 'sensegiver' to the perspective of the 'sensemaker' (Pratt & Rafaeli 2006: 284). Exploring what users do provides inspiration for new ways of configuring a design and it provides information about aspects of the design which do not work.

Users may provide feedback which leads organizational professionals to modify the design. Users may for example find an exhibition to be lacking information, and for this reason signs are added. This changes the design, and may evolve into a process of design deterioration, at least from a professional design perspective. Signs or other visual elements which do not adhere to the overall design concept may be added. Non-design professionals, professionals with other areas of expertise, may not be attentive to what may seem like details of font type, size and color, or the more abstract notion of consistency in design expression. Whether additions are good or bad from a design perspective does not change the fact that design is transformed, translated in practice by users. A design is continuously worked and reworked, negotiated and renegotiated. Design evolves in practice. Viewing an exhibition as a design in continuous transformation opens up the possibility of experiments. The organizational design communicator may

play around with creating mediations which translate the exhibition in new ways, which pull the exhibition in specific directions, add specific narrative layers and certain desired performances.

The exhibition may communicatively be pulled in a specific direction by an organizational sender, but the exhibition is also stretched by visitors, and specifically, by objects which visitors bring with them into the exhibition, be they strollers or mobile phone cameras. Visitors are socio-material entanglements. They couple up with various sorts of stuff. When they enter the museum they are already equipped with design, they are walking cases of design in use, and this does not diminish while they are in the museum. Visitors are a mingle of various human and nonhuman elements.

The present ethnography wants to draw attention to how the exhibition is enacted by hybridized users; by visitors with portable objects. Exploring user practices as socio-material entanglements contributes with insights about mediated encounters between visitors and an exhibition, and thus about exhibitions in use and about visitor experiences. The analyses show visitors with open boundaries, visitors who are distributed into multiple and shifting hybrid constellations, and who thus are open to heterogeneous mingling. This way of viewing the visitor brings with it a specific way of conceptualizing experience. Experience emerges when hybrid visitors mix with an experience site, and it emerges as and in a flow of action. Although this will not be given further attention in the thesis it is relevant to mention that this way of conceptualizing experience may be related to a slightly distorted version of Czikszentmihaly's concept of flow, which covers the self-reported experiences people have while engaged in what Czikszentmihaly calls 'various play-forms'; rock-climbing, chess, dance, and playing ball. Flow experiences are characterized by complete absorption in an activity and a transcendence of ego-boundaries (Czikszentmihaly 1975). The concept of flow has an inherent orientation towards the experiencing subject, but in relation to this thesis it is central to point out that flow experience is not an individual achievement, flow occurs in activity. Central to flow experience is the merger of action and awareness. Although Czikszentmihaly does not use these terms, activity is distributed between heterogeneous elements, between the human and nonhuman. There is no flow of play in chess without the chessboard and there is no flow experience of rock-climbing without shoes, talcum or cliff. A central line of division may be pointed out here, regarding the question of where an experience is located: "An experience is made up *inside* a person and the outcome depends on how an individual, in a specific mood and state of mind, reacts to the

interaction with the staged event," writes marketing and experience researcher Mossberg (2007), and refers among others to Czikszentmihaly. I would argue that an experience is made in the *relation* between a number of heterogeneous elements, and that this relational experience precedes the internal reaction; to refer back to the quote from above, there is no experience without the 'staged event'. In the introduction to "The meaning of things" Czikszentmihaly with his co-author Rochberg-Halton (1981: 4), argues for a relational understanding of a person and 'the objective world', and points to 'attention' and 'psychic energy' as central mediators. Obviously it is possible to pull at flow experience both from a mentalistic and a relational position. This thesis argues from a relational position and conceptualizes flow experience as distributed and heterogeneous; as a relational achievement.

Practice orientation (III): Place and space are produced in practice

Places, be they natural or cultural, are made and made sense of in practice, through practical actions. A place must be understood in terms of how it is performed by users. Places cannot be separated from the recurrent patterns of action which occur in them, and, reciprocally, understanding social practice entails understanding place. Places are always in the making – or unmaking – and for this reason place must be understood relationally and processually. This approach to place is rooted in a cultural and social tradition within human geography (Massey 2005; Murdoch 1998; Simonsen 2005; Thrift 1996), and is mentioned here because it points out that the museum exhibition may be conceptualized as a practiced place.

This perspective is also found in research on experience, tourism and leisure which is inspired by a *relational and processual understanding of place*. The tourist site, for example, is conceptualized in relational terms, as being co-practiced by the visitor (Bærenholdt 2007; Bærenholdt, Haldrup, Larsen and Urry 2004; Crang 1997; Haldrup 2006; Haldrup & Larsen 2006, 2010). Additionally, leisure and tourism researchers Haldrup and Larsen argue that *material* aspects of tourism and leisure should be given explicit attention, they base this argument on readings of contemporary theory on material culture and hybrid geographies in disciplines such as sociology, geography and anthropology: "this literature shows how objects, technologies and material environments can no longer be evaded by social and cultural theory because culture and social life is intricately tied up with and enabled by various 'nonhumans'. It is argued that material, cultural and social are not autonomous worlds, but intertwine and interact in all kinds of promiscuous combinations. And the inescapable hybridity of 'human'

and 'nonhuman' worlds is stressed." (Haldrup & Larsen 2006: 276). Not only are places created in practical actions, but these practical actions have material and prosthetic features. Tourist performances are both made possible and pleasurable by objects, machines and technologies (Haldrup & Larsen 2006: 276). Haldrup and Larsen argue against giving too much focus to the representational in tourist studies, because this leads to natural surroundings and objects being seen as signifying social constructs rather than in terms of how they are used in practice, and it is exactly use-value which needs to be considered in order to understand the deeply material character of tourism.

"Places and landscapes are not encountered 'naked' but through the deployment of a variety of 'prosthetic' objects and technologies. Technologies are central to how people appear to grasp the world and make sense of it. They are crucial to how places are (or can be) encountered and perceived." (Haldrup & Larsen 2006: 279)

'Things' are important to tourism and leisure performances because of their use-value. They enhance the physicality of the tourist's body, and thus enable the tourist to do things and sense realities that would not be accessible without these helping technologies (Haldrup & Larsen 2006: 276). In this perspective explicit attention is paid to the body, technology and place as they meet up in specific encounters, in *doings* and *enactments* (Bærenholdt, Haldrup & Larsen 2008: 178). It follows from this that tourist performances are hybrid practices and landscapes are heterogeneously and continuously enacted. An experience space is continuously performed by hybridized users, and for this reason it is relevant to closely study the materialities which users interact with and how these interactions take form in order to understand practices of experience, leisure and tourism (Haldrup 2006; Haldrup & Larsen 2006: 276).

Practice orientation (IV): Sociality-materiality in social theory

A key debate in social theory which the inquiry of this thesis grows out of concerns the relationship between sociality and materiality. In social theory there is an ongoing discussion about and exploration of what role nonhuman entities, natural or technical, play in establishing social order. Social science grapples with materiality, specifically with the intertwining interactions of sociality and materiality (Dant 2005 ; Henare, Holbraad & Wastell 2007; Latour 2005; Michael 2000; Miller 2005, 2010; Pels, Hetherington & Vandenberghe 2002; Pickering 2008). The interaction between the social and the material may be conceptualized on a continuum from technological determinism to social determinism. Most con-

temporary social science rests in the middle, where neither the social nor the material is granted the ability to fully determine the other (Pels, Hetherington & Vandenberghe 2002). Materiality and sociality mutually shape the other, and it thus becomes an interesting matter of research to explore how this shaping occurs.

Pels, Hetherington and Vandenberghe (2002) note that in research which seeks to unfold the role of materiality in relation to the social, priority is given to emphasizing the various ways in which the social is ordered and held in place by the material. Social reality is fluid, continuously on the move and materiality plays a crucial role in making society durable. The point that material objects may contribute to social order is explored extensively in sociological and anthropological research on materiality. Some of this research may be gathered under an umbrella as *practice approaches*, which seek to avoid the binary between technological and social determinism by pointing to practice as both material and discursive, and by focusing on activity and mediation (Pels, Hetherington & Vandenberghe 2002).

The most basic definition of a practice is that it is an array of activities (Schatzki 2001; Nicolini, Gherardi & Yanow 2003). In practice approaches there is a general agreement that human activity is connected to and related to material objects, and that material objects mediate human activity. Several practice approaches point out that materiality *stabilizes* the social. This is a central idea, for example, in cultural and historical activity theory, the social learning approach, the cultural interpretive tradition and actor network theory, which all engage with this notion and have developed concepts for exploring how materiality focuses, orders, organizes and stabilizes the social (Nicolini, Gherardi & Yanow 2003; Svabo 2008c, 2009). This does not imply that materiality only stabilizes. Materiality may also do the contrary. It may disturb, break down, go missing, in short *destabilize*. This point is particularly made by cultural and historical activity theory (CHAT) and by actor network theory (ANT), whereas cultural interpretive and social learning approaches have more stability-oriented perspectives (Bijker & Law 1992; Blackler, Crump & Mcdonald 2003; Engeström, Puonit & Seppänen 2003; Lave & Wenger 1991; Nicolini, Gherardi & Yanow 2003; Yanow 2003). Both CHAT and ANT are oriented towards materiality as creating both stability and disturbance. Conflict is an inherent aspect of human life according to CHAT, and ANT, following Serres, sees order as an achievement, an island in a sea of disorder. Order is not taken for given, and a central inquiry thus becomes how order is established; how stability is achieved (Serres cited in Law 2007b: 5).

A central topic in sociality-materiality debates in social theory is the question of agency. Activity plays a central role in all practice approaches, but the question of agency is a primary site of discussion and difference. Who acts? Most practice approaches limit agency to humans. People act. People are the source of activity (Schatzki 2001). A limited body of work, originally developed in the 1980s in science and technology studies under the name actor network theory, has a radically different take on this. This position argues that agency should not be limited to human actors, nonhumans also have agency. Action is an achievement which occurs relationally in the cooperation and negotiation between heterogeneous entities. The idea that nonhuman's may have agency and thus contribute to stability is a point where ANT radically stands out from other practice-based approaches, including CHAT. At the outset Latour, Law and Callon were the primary proponents for this position but it is also argued by Suchman (2003), Pickering (2003, 2008) and Knorr-Cetina (2003), who are central science and technology scholars. The work of these scholars may be gathered under the label of *a post-humanist practice position*, and ANT may be seen as a subdivision of this position. Whether the mentioned scholars situate their studies as practice-studies varies. Law, Mol, Pickering and Knorr-Cetina for example do, whereas Latour does not, but he nevertheless studies practices of science and technology (Latour 1987, 1996). Contemporary post-humanist practice studies do not exclusively focus on science and technology, but extend to various study areas, for example management and organization studies (Law 1994; Suchman 2003; Gherardi 2003), education (Verran 2007; Law 2007), everyday life (Michael 2000, 2006) and tourism (Jóhannesson 2007).

Common for post-humanist practice studies is the position that sociality and materiality are mutually constitutive. The social and the material are inextricably intertwined and agency, intention, subject and object are contemplated relationally (Latour 1992, 1996, 2005; Law 1994, 2002, 2007; Michael 2000; Orlikowski 2007; Pickering 2003, 2008). This position is foundational for the thesis.

Theoretically the thesis engages with several writers who are clustered together as either ANT or post- ANT, and is shaped by both Latour's sociology of associations and Law and Mol's post-ANT interest in multiplicity. The work of Law and Mol distinguishes itself from that of Latour in the primary interest which the first mentioned scholars give to the notions of complexity and multiplicity in their post-millennium studies. It is a 'typical' post-ANT inquiry to explore the relations between multiple enacted versions of something, in this study; an exhibition.

Methodologically the inquiry is also shaped by actor network theory. This tradition engages in practice studies of how patterns emerge in the intertwining interactions of people and things, of society and technology, of sociality and materiality. The study is an ethnography of mediated encounters with a site. It explores the interactions at the museum as they take place among visitors, portable objects and the exhibition. It does not test visitors, it is not preoccupied with what they are supposed to experience according to didactic, communication or design intent. It is not an evaluation of the exhibition. It does not focus on professionals, neither designers nor organizational senders, but it does include museum professionals as they are mixed into socio-material visitor practices. The study presented here is *practice oriented* and *object-subject-site centered*. It provides a detailed account of hybrid visitor practices and attempts to understand the configurations and reconfigurations which emerge in these practices.

A constraint of the study is that it only focuses on portable objects which are in use, and thus does not generate information about objects which are not in use, but which it nevertheless would be interesting to know more about, for example PDAs and audio guides. Another inherent constraint is that the study focuses on one museum at a specific time, and thus the empirical findings are limited to this museum at that time. The museum practices may have changed since. Nevertheless, the developed analytical position contributes new insights about how visitor experiences are co-constituted by portable objects, and this may contribute to the field of museum studies, because it suggests a way of thinking about portable objects in museum encounters and points to the multiple socio-material practices which such objects are embedded in and contribute to producing.

Outline of the thesis

The thesis consists of 11 chapters and a number of preludes, interludes and postludes which are found in the interstices between the chapters.

Chapter one, the present introduction, sketches out that the thesis is a posthumanist practice study which, inspired by actor network theory and related post-ANT studies, focuses on the entangled enactments of portable objects, visitors and the permanent exhibition at a modern museum of natural history.

Chapter two, 'The museum', sets the empirical scene for the thesis by introducing the museum and its visitors. The chapter gives a brief glimpse of visitor practices, highlighting some central points about museum visits. A rich environment such as an exhibition holds multiple meanings and when visitors make meaning in an exhibition, they do so in a personal way where they make use of what they already know.

Chapter three, 'Museum studies review', is a literature review which focuses on museum studies. The primary purpose of the review is to seek out what is known about visitors and portable objects in museums and to point to related themes in contemporary museum studies. Additionally, the chapter accounts for research methods commonly used in museum visitor studies, thus contextualizing the methods of the present study. The main finding of the review is that portable objects are widely overlooked in the museum literature and that the closest related topics are interactivity and digital media.

After the review and as a brief introduction to the theoretical position which the thesis engages with, comes a prelude, 'Ontology - an island of order in a sea of disorder', in which the philosophical foundation of the thesis is sketched up as the ideas that social reality is always becoming, it is relational and it is multiple.

Chapter four, 'Theorizing mediation and multiplicity', provides an introduction to the concepts and understandings which are employed in the analyses of the associations of portable objects, visitors and the exhibition. The chapter outlines actor network theory (ANT) and related post-ANT approaches, and among others engages with the writings of Bruno Latour, John Law and Michel Serres.

The central ideas which are put forward in the chapter are: that associations between heterogeneous entities may be traced by tracing their conjoint action; that mediation is simultaneously a process of link and distortion; and that multiple patterns of enactment may coexist, overlap and interfere.

This theoretical chapter is ended off with a postlude, 'Theoretical buoys: a list of floating concepts', which highlights central theoretical terms and ideas.

Chapter five, 'Black squirrel method', presents the research methods of the study in an account which uses taxidermy as a metaphor for showing research as a materially mediated craft of reality making. The qualitative, empirical fieldwork and the process of getting from produced data to analytical mount are described.

After the methods chapter follow five analytical chapters. The first three of these have the common goal of providing rich descriptions of the association of portable objects, visitors and the exhibition, and the last two pick up on themes which run across the mediated encounters.

Chapter six, 'Exercise pamphlets at the museum', shows how exercise pamphlets, visitors and the exhibition associate and that such associations may both be enforced and obstructed by exhibition objects, exhibition media and fellow visitors. The action which is mediated by pamphlets centres on moving facts about animals from one information deposit to another.

Chapter six is ended off with the fairy tale 'Pacifying Prince Pamphlet', the story of an obstructive grandmother and the defeat of a quiz pamphlet.

Chapter seven, 'Mobile phone cameras at the museum', shows that powerful associations of mobile phone cameras and visitors already exist when visitors enter the museum, and that such constellations are difficult to dismantle although they may be obtrusive to other museum practices. Mobile phone cameras mediate a visual gathering of extraordinary exhibited animals.

Chapter eight, 'Animal costumes at the museum', shows the sociomaterial negotiation which is involved when animal costumes and visitors associate and the frictional patterns of action which emerge when the visitor is transformed into a wild animal which roams the exhibition.

The accounts of the association of visitors, the three portable objects and the exhibition, are followed by a chapter where the three mediated enactments are lined up next to each other, but before this is an interlude in the form of a confessional tale from the museum life of a portable object: 'Confessions of an action addict'.

Chapter nine, 'Mediated modes of visiting', juxtaposes the patterns of action which emerge in the associations of portable objects, visitors and exhibition, and how the visitor and the exhibition are enacted in each of the mediated encounters. The chapter points out that action is the cardinal point in the association, and suggests that when a portable object, visitor and exhibition are joined in action a characteristic mode of visiting is mediated.

Chapter ten, 'Shifting modes of visiting', explores the relations between various modes of visiting, and shows how these may both overlap and interfere with each other. The chapter shows how visitors shift between multiple modes of visiting and suggests that when the various, overlapping and interfering modes of visiting are compiled this adds up to the museum visit being patterns of interference and disturbance.

Before the conclusion the findings of the analyses are mediated as a letter to a friend in the prelude: 'Dear friend'.

Chapter eleven, 'Conclusion', gathers the findings of the study and asserts that portable objects, visitors and the exhibition are associated in socio-materially negotiated patterns of action, and that when these elements are gathered in action, each portable object mediates a characteristic mode of visiting in which characteristic versions of both the visitor and the exhibition are enacted. The exhibition exists in several overlapping versions and the visitor is a shimmering intersection between multiple modes of visiting. The conclusion ends by discussing the findings in relation to research and practice.

Epilogue, 'Another place', shifts the thesis out of the museum and into another site.

In 2005 the Svendborg museum of natural history reopened in a modern version under the name Naturama, a combination of nature and drama. The museum was founded in 1935 by collector and writer Harald Thomsen

2
The museum

This chapter describes the museum of natural history, Naturama, focusing on the permanent exhibition, visitors and visiting patterns. The museum is a rich environment of which visitors make multiple meanings. Visitors combine what they already know with the exhibited objects and the media which they come across in the exhibition.

The sun shines on us as we approach the large rectangular building which holds the new part of the museum. The building somehow always strikes me as a rather closed construction, it doesn't open out to the world, it has a rich inner life, but this is not apparent from the exterior. I have imagined how nice it would be if there was a funky café there, visible from the outside and with a view to the street. But there isn't.

We approach from the West, from the parking lots on the opposite side of the street, and on our way towards the revolving doors, which are the main entrance, we pass by the older building which still bears its name; Svendborg Zoologiske Museum, a privately owned museum established in 1935. After considerable expansion it reopened in 2005 - under the name Naturama. Today the museum is an independent institution which is state-approved with the status of museum. The museum receives a limited government grant, is state-subsidized to carry out specific tasks, and is subject to Danish museum law. This obliges the museum to carry out activities of collection, registration, research and communication all with the purpose of maintaining natural historical legacy, cast light on natural history, develop collections and documentation and making this accessible to the public and research. Furthermore, a central task of the museum is to continuously develop its role as a knowledge and experiencecenter and to contribute to cultural and educational development in society.

The name "Naturama" is a combination of *nature* and *drama,* and was chosen to symbolize the experience the museum hopes to give its visitors: an experience of dramatized nature. The museum manager told me the goal is to be among the top European attractions of its kind. He carried out the long process of developing

The exhibition is in a circular room with three levels: "Air", "Land" and "Water". Multimedia is extensively used to create an effect of dramatized nature. Changes in light and sound give the impression of the cycle of day and night

the concept for the new museum, saw through the building process and has been the manager of the new museum since it opened. He is proud that Danish Tourist Attractions gave it a 4-star rating, and that it was nominated for the Danish Museum Award in 2006, and for the European Museum Award in 2007.

Let's go in, shall we?

A grand entry point

We push our way through the revolving doors and are faced by a black, curved, reception desk. This is what the staff call 'Fronten'. The word translates into *front*, but it also means *frontier*. This is where tickets are purchased. The staff behind the desk wear black t-shirts with Naturama's orange logo and animal silhouettes. Various papers, folders and brochures are placed on top of the desk. Behind the reception desk is an open shop area with several low display tables and counters with diverse paraphernalia on sale. Instead of going straight ahead and into this shop area, we turn left. Some orange stickers which look like bear foot prints indicate a path. We follow it. It is only a couple of steps, and then we are in the exhibition. We are met by an overwhelming view. The light is very special, it is a warm light which constantly changes, and loud rhythmical music further adds to the convincing opening. My son spontaneously started to dance the first time I brought him with me – he was three years old at the time.

The museum is divided into three levels in descending order: Air, Land and Water. On Land, which we see if we look straight ahead, an audiovisual show plays continuous 90 minute loops which, using light and sound, give an impression of the twenty four hours of day and night coming and going. It is fascinating, sometimes, if there aren't many visitors, to sit on one of the fold-out chairs, and just watch the light change from the energetic rhythm of sunrise to a calm starry night, and to hear the accompanying sounds which range from the quiet scuffle of a badger to a trickle of rain and roars of thunder. The show is most impressive on Land, but being on Water is also awesome, particularly when a whale film with a very suggestive soundtrack is shown, it is a seven minute film which is projected on one of the white walls every 20 minutes. The top floor of the exhibition, Air, is not as impressive as these two first floors. Rows and rows of birds are systematically lined up next to each other in a large glass display case. Each bird is perched on a small metal stem. You can either look at each bird or look through a wall of birds for a silhouetted view of Land and below it Water.

The permanent exhibition has three levels: Air on the top floor, Land in the middle, and Water on the ground floor. The floor divisions relate to three catego-

The exhibition was built to fit the skeleton of a sei whale which stranded in 1955 on the coast of Troense, Svendborg

ries of animals - animals that live in the air, on land, and in the water. The animals are, in an almost sterile manner, mounted on podiums, and not, as in traditional museums of natural history, shown in their habitat. This minimalist way of exhibiting stands in contrast to the old part of the museum, which we perhaps can go and see later, with exhibition cases in which an animal is shown on a piece of wood with a fluff of grass surrounding it or something similar. The design in this exhibition is not at all like that. Nothing alludes to nature. The museum manager calls the exhibition podiums for a catwalk. He says that his design brief was very much inspired by the Great Hall of Evolution in Paris Natural History Museum, where animals parade evolution.

Anyway, this exhibition focuses on animals from the North Atlantic and the European lowlands, and it holds Denmark's largest collection of whale skeletons.

The huge whale skeleton you see right there, in front of us has an interesting story. The skeleton is 16 meters long, and it weighs 2 tons. The new exhibition was built to fit its dimensions, so it could still be on show. It is the skeleton of a sei whale which stranded on the beach of a local strait - Svendborg Sund - in 1955. The museum has an original newspaper article about it on their website. The whale is mentioned on the guided tours, and the story is also told on one of the column display signs which are scattered throughout the exhibition. These signs by the way are attempts at solving a problem visitors voiced about there not being enough information about the exhibited animals on display. When the museum opened in 2005 information about animals – apart from their names which were visible on small podium signs - was only available from information kiosk computers. Visitors were supposed to go to computers which are located in various locations in the exhibition to find information about the animals. These information kiosks are called *Nature Bases*. Today the podium signs and information kiosks are supplemented by column signs and extra sheets of information which are mounted on the podiums.

In the museum, a continuous dialogue goes on about the relationship between text and visitors. One of the museum staff, a biologist who works as a *Nature Guide*; a science communicator who among other things does presentations and gives tours, stresses that the purpose of Naturama is to educate the public about nature.

"A place like Naturama wants to give knowledge about animals and nature, basically in order to create an understanding among people, so that they, in their everyday activities, understand to take care of nature – and do so. So, that they appreciate nature and think about how we treat nature."

On their way to Land visitors encounter a brown bear cub which they may touch

According to the museum manager this is not done by displaying text: "We have never wanted to make a poster exhibition. We have seen so many museums that are full of text, and in my opinion, people don't go to museums to read posters and text, they go to get an experience, to play, but also to learn something, and that is why we have to get a mix which contains play, learning and experience, and that is what we have worked with."

The polysemic whale

We came from column signs and the sei whale: The sei whale actually played an important role in the initial phase of my fieldwork. I was fascinated by the many different ways in which visitors relate to exhibited objects. Each visitor provides his or her perspective on an object. Take for example the whale, visitors enact it from various perspectives, in various ways. A couple of snippets of data from my fieldwork may help show what I mean.

Two small children, a boy and a girl, perhaps twins, around two years old, toddle in on the ramp which we stand on now. They stop and say "wow". A dark haired woman follows, she doesn't seem to be their mother, she looks a little bit older, she is probably their grandmother.

"Come on we have to go this way", she starts walking up the ramp. The girl follows, the boy lingers for a moment, pushing his fingers through the net which secures the ramp. He looks down at the killer whale, and at another whale, the northern bottlenose, both of which hang in the blue abyss below him. He sits there for a while, and then runs after the others.

In the hallway they stop and pat the bear which visitors are allowed to touch, and then they enter Land, where they see another brown bear.

"Touch?" asks the little girl.

"No touching here – what is it? Do you remember what it is called?"

"Beah." [bear]

"Yes, bear, that's right."

The boy has gone further ahead, but the woman and the girl stop at a point where they can look down on Water and on the large sei whale skeleton. The woman leans out over the banister, looking at the skeleton. The girl stands right next to her. Looking out from behind the net fence, she looks through the white skeleton, across to the other side of the room where she sees a polar bear on a distant podium.

"Beah."

"No, that's not a bear, that's a whale."

"Beah."

The woman now also sees the polar bear.

"Yes, that's a bear, that's right."

This little piece of interaction shows how the visitors relate to the exhibition as something which they know. The shape of the huge whale skeleton is too abstract for the girl to see, but she recognizes a bear when she sees one, and she knows its name. The woman at first does not see the polar bear, she is engaged in looking at the whale skeleton, but when the girl repeats her observation of a bear, the woman also notices the bear.

Buildings and the big fella

In another visitor interaction, the whale is also an object which both may be spoken of or not spoken of, seen or not seen, reflecting that an object which one visitor is drawn to and finds interesting is not necessarily noticed by a fellow visitor.

Larry (63) and John (34) visit the museum. They are father and son. John has been to the museum on several occasions. It is Larry's first visit. Larry is wearing a pair of videoglasses.[1] The men have just stepped out onto the podium from where you can see all three levels of the museum: Water, Land and Air. Right in front of them hangs the largest museum object: the skeleton of a sei whale.

"What a big fella that one," Larry says while looking at the whale skeleton.

"Yes," John says. "Down here you can see whales, and mammals, and the birds up there." There is a five second pause in which no one says anything.

John then speaks again, "There isn't much exhibition case to it."

"Nooooo," Larry replies.

"They've reused all of the old stuff, from the old zoological museum."

"They could fit it in?"

These two visitors have two different topics which they want to talk about, Larry reacts to the whale's skeleton, John doesn't, he is more interested in the exhibition design. In this situation they end up talking about the exhibition design, but later, when they are on Water, Larry takes up the topic of the whale again. He has looked at it for a while not saying anything.

"But the big one we have here, what is it, what kind of a fella is this?"

He approaches the sei whale.

1 A pair of glasses used in my fieldwork: non-strength glasses holding a video lens and microphone. The glasses record what Larry sees, conversation and other sounds. The use of the glasses is further described in the methods section, chapter five.

"It's this one, right?" Larry says as he looks down at the podium, where there is a sign. He reads out loud, "*Sei whale.*"

John echoes the words, "Sei whale."

"Yeah, there are a lot of different kinds of whales, huh?" Larry says and looks up at the whale skeleton for a while without saying anything. Then he says, "But I remember once we, it must have been with school, in the lower grades once, we were at that zoology museum in Copenhagen."

"Krystalgade?" John asks, affirming that he knows where the museum was.

"Yeah, that must have been it, we were in the basement," Larry says.

"It was very impressive, I remember, the large whale skeletons which hung down there."

"Yeah," John says, "it's a nice building as well, but that is some time before me."

"Yeah, it's back in the early 50s or something like that…"

Larry relates to the whale skeleton, he is impressed by its size and wants to know what it is, the name of it. Furthermore, the object becomes an occasion for remembering, it elicits memory. The initial focus on the whale in this exhibition is moved to another focus on another whale in another building at another time, a time which the father remembers from his early childhood, before his son was born but which the son relates to through the architecture of the building. John again voices his design angle at exhibitions, but also pays attention to his father's recollection, contributing that the building his father remembers visiting is also a nice building. The two men meet up in a conversation which springs from the whale, but which reflects the individual perspectives of each of them: the father's memory of other whales in another but similar place, and the son's appreciation of design and architecture.

A whale you may smell

In yet another interaction, the same whale is enacted by visitors, again as an object of recollection and as an object which folds time and thus holds several temporalities. Four visitors from a retirement home and four care-takers are on a guided tour with the Nature Guide, Vera. The visitors are on a 'pat-a-cake' visit where they start off with coffee and cake in the café and then go on a tour. There are three women, they are all in wheelchairs and a man, Otto, who is a retired Royal Danish Guard. He walks. The small group has been on Land for a little while, among other things in The Touch Room, an area adjacent to the main exhibition, where they have touched a marten, and Karen Margrethe has mentioned that she has experienced many of them, way too many. "Rascals," she says.

On Water Vera takes them to the large sei whale. She asks if they know what it is. They respond and Vera continues: "And you know what, this is the whale that stranded on Tåsinge 52 years ago."

"Yes, I remember that," says Karen Margrethe in a crisp voice.

"I went to see it. They wrote about it in the paper as well."

"Yes, that's right," says Vera. "It got stranded on Tåsinge back then, and Harald Thomsen, who had the old zoological museum asked if he could have it. And he could."

"It smelled awful," says Karen Margrethe.

"Yes that is correct. It laid there for sometime and then it started deteriorating," says Vera. "They told him that it couldn't lie around there smelling, so he had to figure something out, I think they pulled it to somewhere in northen Jutland, where is was cleansed," says Vera.

"But it came back here, and now it hangs here."

"The new museum is actually built to house it, so it would fit."

Here, the whale becomes the intersection between a visitor's personal experience and an institutional story about the whale, presented by a museum guide. The whale forms part of an institutional account, but it also forms part of a personal memory of the senses – sight and smell. Again the whale opens a gathering of various temporal epochs. The whale both anchors a present museum experience and a past where the whale was another, the museum visitor young and the guide not yet born. The whale holds multiple meanings, and visitors use what they already know to make sense of it. In other words: visitors engage with polysemic exhibition objects and actively produce the exhibition as something which is relevant to them (Hooper-Greenhill 2006a: 236).

Growing visitor numbers

At Naturama visitors are divided into three categories: adults, seniors and children. Adults pay full price, seniors pay a reduced price, and children under 18 enter for free. During the period 2007-2009, the largest group of visitors was children and youngsters, although only marginally. They account for 51 percent of the total number of visits during these three years. In 2007 under eighteens accounted for 58 percent of total visits, in 2008 the figure was 51 percent, and in 2009 the figure was 46 percent, so the proportion of adults has grown during these years. Of 50,584 visits in 2007; 29,217 were under eighteens and 21,367 were adults. In 2008, the total number of visitors was 63,856; of which 32,589 were under eighteens and 31,267 adults. In 2009 there were a total of 65,509

visits; of which 30,595 were under eighteens and 34,914 adults. Naturama has experienced an increase in visitor numbers during 2007-2009 from 50,584 in 2007 to 63,856 visits in 2009.

Competition for visits is with other tourist attractions in the region, and on a national level amusement and experience parks and museums and other attractions which have nature as a theme. Nationally, the museums of natural history have experienced a decrease in visitor numbers and have done so during the past 35 years from 400,000 visitors to 300,000 in 2006.

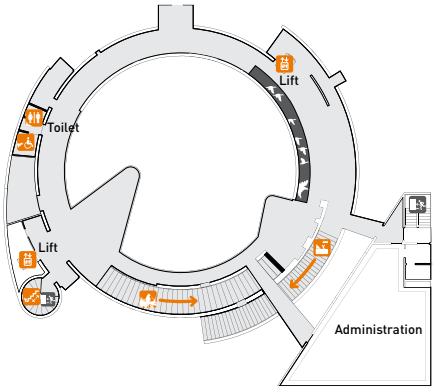
Visitors go to Naturama both for leisure and education. Visitor numbers vary substantially over a year, among other things due to seasonal variations in tourism: vacations are high season. Two thirds of visiting children participate in family visits, and one third are on institutional/educational visits. It is not uncommon that children who have participated in school visits bring their family on later leisure visits. Visitors are primarily Danes: 2,644 visitors were classified as 'other than Danish' in 2007.

There is a definite rhythm to visits. *Weekends and vacations* are family visiting time, whereas weekdays primarily are busy with schools and other groups. When families visit the museum they usually either walk around on their own and/or do the museum with exercise pamphlets. When visitors see other visitors with exercise pamphlets, they are often inspired and go to the front desk to purchase pamphlets if they hadn't gotten them from the start. Vacation visiting patterns are quite similar to weekend visiting patterns, but during vacations, the museum offers more organized activities.

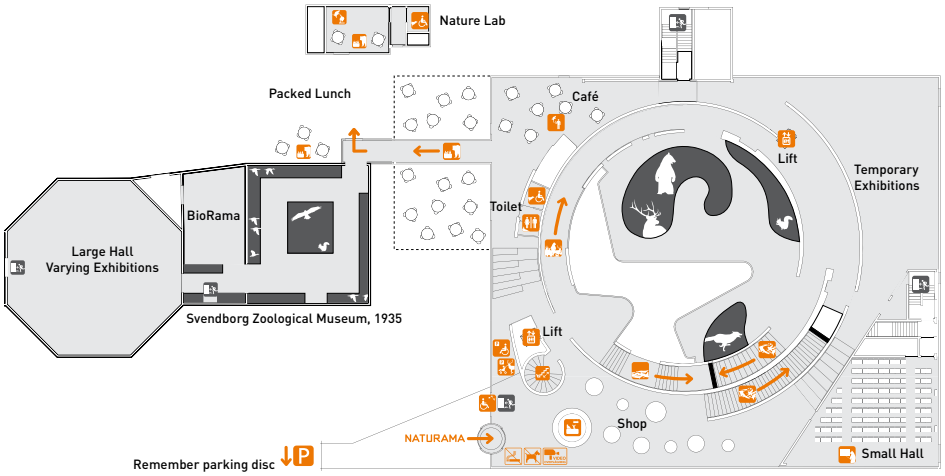
Weekdays are primarily occupied with institutional visits. Large groups of visitors arrive at 10 o'clock, when the museum opens. From 10 to 12 the museum bustles with activity. Large school groups dominate, but smaller groups with smaller children may also often be seen, for example day-care mothers with up to four children, or small groups of kindergarten children with three or four adults. School classes engage with the museum in several ways. Some classes have pre-booked an activity. They may pre-order exercise pamphlets or book an educational session with a Nature Guide. Some classes combine these, and both do a guided tour and exercise pamphlets. This is often too much activity to fit in the limited time available. Classes usually spend 1-1½ hours in the exhibition and then they go to the cafeteria to eat lunch. Educational visits are usually over at around 1 o'clock. The rest of the day is much quieter. Afternoon visitors may be the odd large-eyed toddler with a grandparent, or an occasional pair of adults. The atmosphere in the museum depends very much on how many visitors are

WELCOME TO **NATURAMA** KEY MAP

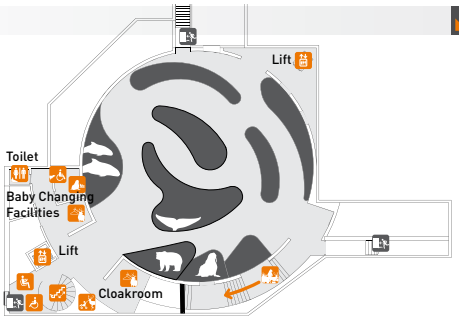
AIR LEVEL | 1ST FLOOR



TERRESTRIAL LEVEL | STREET LEVEL



MARINE LEVEL | BASEMENT



NATURAMA
moderne naturhistorie

present. When the exhibition is full of visitors, especially when it is full of children, there is an intense, compact feel to it. Noise levels go up and staff doing guided tours fight for visitor attention. Seen from the guide's perspective, the exhibition almost communicates too much. It makes it difficult for guides to deliver their message and to keep people focused. Guides develop techniques for handling this, one guide saves his talks for areas of the exhibition where he can place visitors with their back to the exhibition, so they face an empty white wall and him. The group looks at him while he talks, and behind the backs of the captured, orderly and focused group, the commotion continues. Vibrant herds of school children dash between brown bear and musk oxen. Teenagers flicker between phones and fellow visitors and families walk around, wrapped in invisible elastic thread, each member pulling in a different direction, but nevertheless staying together.

The skeleton of the stranded sei whale is on display in Naturama's permanent exhibition, which was designed to fit the whale. Occasionally, elderly museum visitors remember the whale stranding and some even vividly recall the foul smell which the whale developed in the following weeks

The stranded whale

Translation of article from Svendborg Avis, Sydfyns Tidende, Monday May 23, 1955. The newspaper article is included here as a curiosity which adds a historical, documentary dimension to the exhibited whale skeleton. The original article is accessible on Naturama's website.

Fabulous Scenery: 15 meter long whale stranded in Troense

It was Parish Vicar Edv. Knudsen, Troense, who around 6 p.m. observed the Whale which had swum in on shallow water outside of "Lodkroen" and which now could not make it out again. Edv. Knudsen called the emergency assistance and the police in Svendborg who immediately started a rescue.

Rumors had rapidly spread about "The Stranding" and when the rescue boat arrived to the Scene of the the 10 ton colossus' last hours, small rowing and motorboats were swarming around it. From Thurø arrived Fisherman Frede Jensen with his Boat, and from this a harness was put around the Whale's neck and attempts were made to pull it to deeper waters, but apparently this was not in the Whale's interest, for it broke the harness and swam a distance towards some fishing stakes, followed these towards Land and stranded on even more shallow Water than before.

After a couple of failed attempts at getting the Whale towed out again, a decision was made to put it to sleep. However the emergency assistance in Svendborg did not have ammunition of the required strength, and for this reason assistance was requested from the Main Station in Odense, who established contact to the Military. The Odense Garrison sent an explosives expert with the necessary materials. He arrived at around 10 p.m., but then new problems arose for the whale killing. The powerful ammunition required that a surrounding area of 700 meters was deserted of people when the explosion occurred and it was actually impossible to completely clear the coast of spectators. It was equally impossible to place the explosives correctly on the Whale which although it was quite calm and apathetic, once in a while struck its tail. For this reason it was necessary to use a Rifle with very powerful and deeply penetrating cartridges, and with this weapon it was possible to put the very rare visitor in the waters of southern Fyn to rest. It was necessary to shoot some 20 to 25 times before the Whale's death was a certainty.

The following day a new report was made in the newspaper, this time focusing more on traffic than whale. Article from Svendborg Avis, Sydfyns Tidende, Tuesday May 24, 1955.

Masses Flock to the Whale in Troense

So far, 10,000 people have seen the Whale. Traffic to and from Taasinge almost came to a stop several times last night.

The whale, which Sunday evening stranded and was killed on the Coast by Troense, yesterday caused the breaking of all traffic records on the ferries at "Vindebyfærgerne", on the Road between Vindeby and Troense and in Troense city. But things went alright. People voluntarily adjusted to the circumstances, even though the heavy traffic was slow. There were no accidents, so things went quite well.

So luckily things went alright. The two Ferries "Svendborgsund" and "Fritz Juel" sailed non-stop, and as soon as a ferry was on the verge of bursting, it sailed across the sound and, as quickly as possible, back to be loaded up again.

The streets of Troense were almost inaccessible for traffic due to the many parked vehicles. The situation was dealt with by making a one way flow of people to and from the seashore, where the whale is, and at times people were packed around it. On one occasion, the make-do barrier which had been set up around the whale broke, and in the split of a second, the huge Animal was surrounded, and several people obtained a piece of its skin. Quite a fun souvenir to take home.

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ce which I watch
“What a beauti
magic place,” sh
she breathed in
through her no
a wonderful sm

They have a smell to them, the exhibits. There is an indefinite, strange smell in the museum, particularly on Water. Faroese singer-songwriter Eivør mentioned it at the beginning of a performance. “What a beautiful, intense and magic place,” she said, and then she breathed in, deeply, slowly, through her nose, “…and what a wonderful smell of… whale.”

3
Museum studies review

This review gives an overview of existing literature which relates to how portable objects, visitors and exhibition associate. The review focuses on the museum literature, inquiring what is already known about visitors' mediated encounters with an exhibition, about the visitor experience, and of children as visitors. The review ends with a description of methods commonly used in museum visitor studies.

The field of museum studies is narrowed substantially by the focus on portable objects. Two journals have been extensively reviewed for articles which have portable objects or related issues as their topic: Museum and Society and Nordisk Museologi. Eight articles out of 135 cover a topic which relates to portable objects and one article reports findings from an actual visitor study which focuses on a portable object in use.

Museum and Society has been chosen from a total search result of 28 museum journals in the Roskilde University library catalog, where the criteria for selection was that the journal should be peer-reviewed, international and not only related to one museum or one museum topic (many of the journals concern specific museums: American Museum, British Museum, Metropolitan, Statens Museum for Kunst (National Gallery of Denmark), or specific topics: holocaust and genocide studies, Journal of Systematic Palaeontology). Museum and Society was first published in 2003 and is published by the University of Leicester's School of Museum Studies, which is a renowned center for Anglo-Saxon/European museum studies and amongst others has professor Eilean Hooper-Greenhill affiliated. The other journal, Nordisk Museologi, is a Nordic journal which has both articles in English and in the Scandinavian languages. It has been peer-reviewed since 2006 and is an important reference in a Danish museum context.

Portable Objects in Museums (or rather, the lack of them)

Museum and Society mentions audience research among its core topics. A review of 78 articles which have been published in the journal since it started in

March 2003 till the latest issue of July 2009 shows that 16 out of 78 articles deal with visitor issues, and that four of these articles deal with issues which more or less explicitly relate to portable objects. These four articles mention some sort of *mediating materiality*: (the lack of) chairs in an art gallery, a white sash used as a prop in a special after-hours role-playing event, dictaphones and computers used in an educational session, and one of the articles explicitly focuses on mediating objects: objects devised to communicate an exhibition to visually impaired visitors.

During the past five years Nordisk Museologi has covered the topic of visitor's reception of museum exhibitions in 13 out of 57 articles, and four of these articles have had portable objects or related issues as their topic. These four articles are all on digital technologies, one of them is a tour through new technological possibilities and how various cultural sites are putting these to use, the remaining three focus on one site and are an advocacy for the promises of digital technologies in general and provide an insight into the ideas behind some technological solutions which the authors are co-developers of.

Actual visitor studies and advocacies

The articles which are found in Museum and Society and in Nordisk Museologi may be grouped into two broad categories: actual visitor studies and advocacies. A*ctual visitor studies* is research that reports on existing visitor practices and on the use of (or need for) mediating materialities in these. Included in this category is research which mentions mediating objects, although the article does not reflect analytically on them. *Advocacies* are articles which focus on digital media and which argue for the promises of new technologies in the context of a museum or experience site. The articles either in general terms sketch out the possibilities of new media, for example arguing that new media can contribute unique and rewarding experiences which no other medium can, or – and this is the most common - argue for the advantages of new media and accounts for a project where the researcher is co-developing such media, and perhaps reports pilot tests of the media.

These two categories of *actual visitor studies* and *advocacies,* which are developed from the review of the two journals, also serve to encompass book contributions which touch upon the topic, notably the anthology "Digital Technologies and the Museum Experience", edited by Tallon and Walker (2008). As regards the extent of my review, I would like to mention that I have not sought out literature which focuses on learning, but I have included issues of learning as they are mentioned in the museum literature.

Mediating materialities in actual visitor studies

Hetherington (2003) pays explicit attention to material mediation in visitor practice when he in the article "Accountability and disposal: visual impairment and the museum" focuses on how two galleries in The British Museum are encountered by a visually impaired woman and on the various mediations which occur, both through the sense of touch, where the woman, Sara, describes the tactile sensation of a selection of sculptures, which visually impaired visitors are allowed to touch, and as mediated by a number of materialities, among others a tactile book called "Second Sight of the Parthenon Frieze" which has the job of making the Parthenon Frieze accessible to the visually impaired visitor. Hetherington mentions a range of objects, Braille signs, easy access ramps, stairs, toilets, audio guides and the tactile book, and shows how museum practices of access and the mediating objects constitute the impaired person and her embodiment. Hetherington's work is oriented towards discourse, materiality and the body. His approach to materiality is referenced to Callon, Law and Latour (Hetherington 2003: 107).

Lack of chairs

Beaumont and Sterry (2005) in "A study of grandparents and grandchildren visitors to museums and art galleries in the UK" are attentive to the effect which the physical setting has on the studied group of visitors. They particularly mention the lack of seating: "We frequently observed grandparents looking around for somewhere to sit, especially if the grandchildren were absorbed in an exhibit or an activity. They might end up perching on the edge of an exhibit, sharing a seat with a child, or leaning on a wall."(Beaumont & Sterry 2005: 173). The authors point out that standing to look at exhibits and reading text panels is physically demanding and may be unattractive. The primary analytical focus in the article is not material mediation, but the article shows attention towards material and bodily aspects of the museum encounter.[1] Chairs may actually qualify as portable objects which mediate a museum experience. They are objects which mediate visitors' encounters with the museum. Naturama puts portable chairs at the disposal of visitors, but they are not 'carried around'; visitors pull them off a rack which stands right next to a film viewing area, and use them there, but for obvious reasons they do not walk around with them.

1 Discomfort during experiences which are supposed to be leisurely is also mentioned by STS scholar Mike Michael in an essay about how an uncomfortable pair of walking boots severely obstructs the experience of nature on a trek (Michael 2000).

Overlooked objects: props and tools

In "Crafting emotional comfort: interpreting the painful past at living history museums in the new economy", Tyson (2008) mentions the role a prop (a white sash) has in a 90 minute reenactment session where visitors role-play fugitive slaves on a US underground railroad in 1836. Customers pay to participate in a 'special after-hours event' which is targeted to groups and schools, and which involves "a slave sale and a wide range of people, including a belligerent transplanted Southerner, a reluctantly helpful farm wife, a slave hunter…" (Tyson 2008: 249). Participants who are overwhelmed by the reenactment activity may use the sash. Tyson quotes from a role-playing encounter; a guide says: "If the experience becomes too intense we have given you a little escape hatch; we have given you some white strips to tie around your head if you can't stand it any more, in the mean time, slip them very carefully in your pocket or in your sleeve or something so they're not visible…" (Op cit).

Tyson does not expand further on the role-playing or the use of props, so the role of the sash as a life-line from one reality to another is not developed analytically, but Tyson mentions that 'the sashes of invisibility' were used by some of the participants and that for the visitors who did not use them, they "lent comfort because they held *promise* of escape from the role play" (Op cit).

In "Visual events and the friendly eye: modes of educating vision in new educational settings in Danish art galleries" Illeris (2009) analyzes experimental, learner-centered education in a gallery of contemporary art. In one of her examples, Illeris mentions that visitor-learners are equipped with digital dictaphones and asked to give voice to one or more sculptures in the exhibition, and after this edit their audiofile on a computer, present it to classmates and finally upload it to the museum's blog on the internet. Another example tells that participants are asked to do their own portraits. Although the article mentions a number of important mediating devices, the mediations are not explored analytically. The article for example does not tell how the children go about doing their portraits, but the article shows one of the pictures, and from this it appears that the portrait is taken with a mobile phone camera (Illeris 2009: 27).

Advocacies: developing technologies

A cluster of articles focus on the promising possibilities of handheld media in museums and experience centers (Kahr-Højland 2007; Hansen et al. 2009; Schroyen et al. 2007; Tallon 2008; Gammon & Burch 2008; Mensch 2005). Mobile phones and PDAs are distinguished as being *digital* and *new,* as holding promises for

the future and having the potential to "mediate personally rewarding museum experiences that no other medium can replicate"(Tallon 2008: xviii). What in the context of this thesis is relevant about these articles and the media they focus on, is that they have portable objects as their topic, and they are engaged with the (design of) mediated encounters with a museum or experience site. Digital technologies such as mobile phone cameras, PDAs and digital audio guides are presented as a means to stimulate visitor access, engagement and learning (Tallon 2008: passim). Digital technologies are seen as being related to a shift where the single authoritative voice of the museum gives way to a polyphony of voices. The points of view on exhibited objects are multiplied and the world is enacted as multiple co-existing meanings where the right of speaking on behalf of the objects is distributed and extended to the public (Samis 2008: 6ff). Tallon points out that the key to the use of handheld digital technologies is that they should be personally relevant to the visitor, offer interactivity, be easy to access, and that the visitor should be able to control their content (Tallon 2008: xiv).

Annotating the environment

In "Annotating the environment" Mensch (2005) provides a tour through several examples of technologies which museum visitors and, in more general terms, the public (examples are also from non-museum contexts) may use in cultural activities of relating to places, or of sharing personal stories and heritage. Several projects from around the world are briefly described listing numerous possibilities as to how people may interact with physical surroundings with help from various kinds of 'locative media'; mobile phones and PDAs, and related information appliances. The analytical point made in the article is that heritage may be created in the here and now and that new technologies may help do this by making it possible for people to describe their history, culture and the place which they inhabit or pass through. Mensch has not participated in the development of these projects, nor does the article present user experiences, but the article on a more general level sketches out technological possibilities for annotating the environment (Mensch 2005).

Kahr-Højland's article (2007) "Brave new world: mobile phones, museums and learning, how and why to use augmented reality within museums" is about an interactive narrative called Ego-Trap at the Danish science centre Experimentariet. The narrative is facilitated by the visitor's own mobile phone, and is a virtual extension of the physical exhibition. With its point of departure in theories of learning, the article argues for the virtues of mobile phones, and for their potential as an augmented exhibition reality, and points out that one of the

interesting possibilities with this kind of media is that one exhibition hall may have myriads of narratives going on at the same time; the same exhibition will host different exhibition narratives. Kahr-Højland has participated in developing the interactive narrative as part of a PhD project. The article does not report studies of visitors participating in the interactive narrative, which has just been launched at the time of writing.

In the article "Location-based solutions in the experience centre", Hansen et al. (2009), present a specific mobile-based technological setup which is being developed for a Danish experience site called NaturBornholm. The project aims to provide information to visitors about the nature on Bornholm, both inside and outside of the experience centre, and this will be done by displaying audio, video and text at the right location and at the right time. The mobile device is being used as an information provider. The authors are a mixed group of university researchers and experience centre professionals who conjointly are developing the mentioned technological solution.

Hansen et al. (2009: 46) note that mobile phones, apart from having a number of relevant features such as camera, GPS, Bluetooth, web browser, and multimedia player, have the great advantage that users are familiar with their particular device. A crucial difference between mobile phones and PDAs is that of familiarity. This is indicated as the reason why NaturBornholm chooses to communicate to user's mobile phones. Kahr-Højland (2007: 7) also points to familiarity as a central advantage of mobile phones.

In the article "Beyond mere information provisioning: a handheld museum guide based on social activities and playful learning" Schroyen et al. (2007), describe an approach to designing a mobile handheld guide and playing device, based on the PDA, for the Gallo-Roman Museum in Belgium. Schroyen et al., note that user studies of the first handheld guides in museums show that PDAs have the unintended effect that they create isolated experiences and Schroyen and coauthors further write: "Concerning the predecessor of the PDA, the audio tour, Angliss suggests that 'audio can also put individuals in a bubble, making it difficult for them to keep track of companions or family members, let alone chat about what they have seen'. This remark also applies to PDA-based museum visits and indicates an important obstacle in the use of these new technologies in museums." (Schroyen et al. 2007: 33). The authors use Falk and Dierking's (1992) model of the museum experience, which stresses that the museum experience involves personal, social and physical context, and attempt to embed aspects of 'personalization' and 'social interaction' into the PDA application.

Reflections in relation to portable objects at Naturama

In general, the articles do not question their own technological solution; it is taken as a premise. This is stated blankly at the beginning of the article by Schroyen et al.: "The starting point for this interdisciplinary collaboration is our strong belief that a handheld museum guide is a promising medium to enhance the visitor's learning experience."(2007: 30). Such a strong belief runs through most of the articles which deal with digital media, a notable exception being Falk and Dierking's contribution to "Digital technologies and the museum experience", where the authors after evaluating research on mobile technologies and visitor interaction and learning, point out that: "… a full understanding of how digital technologies support museum-based meaning making lies more in the future than in the present."(Falk & Dierking 2008).

The relation between the user, the portable object and the exhibition stands out as crucial in order to build an understanding of how technologies – digital or not – participate in meaning making in museum encounters. The fit between the portable object and the exhibition is a central topic. In their article, Schroyen et al. (2007: 37) report observations from the test of a PDA game prototype, which they have developed for the museum. This test is carried out by letting three secondary school classes play the game. The test takes place in the school classrooms. Wall posters are hung on the wall to "simulate a museum gallery" (op cit). The mere fact that the test can be carried out in a setting which is not the exhibition points to a central matter of concern which is highlighted by the analytical position which is developed in this thesis: namely that of the relations between exhibition and the portable objects.

The authors write: "Concerning the interactions between the players and the museum exhibits – the information posters on the walls – we can state that there was generally a good balance between looking at the screen and looking around. Exceptionally, one team did not automatically look around to examine the museum, even though the PDA explicitly asked them to. The provisional test setting probably did not invite these students to explore their surroundings because of the limited space that was available. We expect that this problem will not occur when the game is played in the actual museum environment that is more suited for exploration."(Schroyen et al 2007: 38).

The question which presses to be asked is: if the game can be played without the exhibition, why then, should players look at the exhibition?

The relation between the exhibition and the portable media is also mentioned by Kahr-Højland, who refers to a discussion about whether the mobile

phone will steal attention from the exhibition. Kahr-Højland (2007: 7) recounts that Ingemann and Gjedde claim that the interactivity and interface of the mobile phone may move visitors' attention from the exhibition which it is supposed to mediate. Kahr-Højland argues that this is not the case and that mobile phones are so familiar for youngsters that they in fact are what she following Norman calls a *transparent medium* (op cit).

As these articles show the question of how the portable object, visitor and exhibition associate is central, and may help build empirically based knowledge about the relation between exhibition, handheld medium and user. The argument which will be made in the course of this thesis is that mobile phones, like animal costumes and exercise pamphlets, distort, disturb and interfere. They do steal attention. But they also frame, centre, and focus. Viewed this way the museum encounter becomes a turbulent meeting between visitors and various objects/media/technologies, and meaning emerges in intertwinements of various materialities and socialities.

Summing up

In the review I have encountered a limited number of articles which deal with the role of portable objects in encounters between visitors and an exhibition, predominantly in the form of handheld digital media. I have not come across literature which focuses on exercise pamphlets or animal costumes in visitor practices. The portable object which is mentioned by Tyson, the white sash, is what comes closest to animal costumes, and some of the themes of information provision, which are covered in relation to digital handheld guides and the tactile guide, relate to exercise pamphlets.

The role which primarily is ascribed to the portable object in the reviewed articles is that of a *guide*; a handheld digital guide which provides information or narratives about the exhibition (Hansen et al. 2009), or a tactile guide for the visually impaired visitor (Hetherington 2003), but the role of the portable object may also be described as that of a *playmate* in the form of a computer game (Scroyen et al. 2007; Kahr-Højland 2007), or an *instructor*, where it tells the visitor how to interact with an exhibition (Kahr-Højland 2007).

Interactivity

From this quite minute focus on portable objects, the perspective will now be widened a little. In the general museum literature, the theme which most closely relates to portable objects is that of interactivity. In particular, science centers

have specialized in developing and using interactive exhibits.

The common prototype for interactivity in a museum context is stationary exhibits which the visitor interacts with. Interactive exhibits are exhibits which visitors may touch and do stuff with. Interactive exhibits can be traced back – at least – to 1889 (Witcomb 2006), and blotches of user-orientation and interactivity in museums and other types of exhibitions can be found in the 1920s and 30s, (Henning 2006), as well as 1940s (Barry 1998). According to Witcomb interactivity became a celebrated focus in museums again from the late 1980s and onward. A strong link exists between interactivity and science museums, and this link has shaped interactivity so it is associated with scientific experiments; as exhibits which are supposed to give the visitor an impression of what it is like to be a scientist (Barry 1998).

Interactive exhibits typically make use of technological media, are additions to the main display and are devices which the visitor can operate. In short this is called 'hands on', and is related to what Macdonald notes that visitors, particularly children, like in an exhibition, namely to be able to 'do and touch' (Macdonald 2002: 229; Witcomb 2006). Interactivity appeals to visitors. According to Witcomb, a well established body of research shows that visitors spend more time in an exhibition if interactivity is an option. Interactivity attracts visitors and it keeps them longer. In the 1990s following the introduction of their first interactive exhibition, the Science Museum in London experienced a massive increase in interest from visitors, and a particular interest in the interactive exhibition. The interactive exhibition, Launch Pad, was visited by 714 visitors per square meter per year compared to 44 for the rest of the museum (Witcomb 2006; Barry 1998). Interactivity attracts visitors and engages them while they are at the museum. Interactive exhibits can promote engagement, understanding and help visitors remember exhibits and is a core way in which museums and science centers may work towards a user-centered exhibition design (Allen 2007: 54). According to Barry the focus on interactivity which emerged from the late 1980s and onward is related to museums being faced with having to consider themselves as producers of cultural products, having to cater to consumers, and not (solely) as "providers of cultural formation", as a place where visitors come to be "culturally and morally improved" (Barry 1998: 100). Museums must both educate *and* entertain. Barry points out that interactivity is launched as a solution to the problem of the relation between science and the public, where the public either does not understand science or does not estimate it in the way which science institutions desire (Barry 1998: passim).

Critique of interactivity questions whether interactive exhibits are actually interactive: touching a screen in order to choose between some available options is merely an illusion of choice, it is argued. Furthermore, the critique raises the question of whether visitors actually learn from interactivity. It is, for example, often not clear which scientific principles visitors are supposed to pick up from interactive exhibits. Interactive exhibits are criticized for only being about having fun. These critiques have not lead to the abandonment of interactive exhibits, but to an increased tailoring of these to fit specific age groups and to increased attempts at making them both educational and entertaining (Barry 1998).

How interactivity works in practice is an underexplored issue. As Hooper-Greenhill (1995: 9) remarks: "We know […] that people appear to respond very positively to the opportunity to handle objects and exhibits at discovery and interactive centres. […] What we do not really know is why people like to handle things". Hooper-Greenhill suggests that there is a need to look more deeply into how and why visitors are engaged by handling objects (Hooper-Greenhill 1995), and the need prevails: "One of the most pressing concerns in contemporary museum studies is that of accessing the audience." (Macdonald 2005: 119).

The museum experience

A central work about museum experiences is the book "The museum experience" by Falk and Dierking (1992). It is often cited and is an important reference in subsequent visitor research (Grøn 2007; Djupdræt & Hatt 2009). "The museum experience" provides a comprehensive understanding of what visitors do at museums, and what characterizes the leisure activity of going to a museum. It furthermore covers the museum visit from the initial phases of getting the idea of going to the museum to how visitors look back on and remember museum visits. It thus deals with the *before*, *during* and *after* of the museum experience.

A museum visit is a leisure activity, a social outing on line with other excursions such as a visit to a park. Visitors go to museums to have a good time, to enjoy themselves and to spend time with friends and family. Visitors do not list 'education' or 'learning' as primary reasons for going to museums.

"The visitor's perspective of the museum is, appropriately, that of a consumer of leisure-time activities. It therefore includes images of the gift shop, restaurants and the friendliness of staff." (Falk & Dierking 1992: 81)

Visitors have expectations before going to museums. Adults primarily have social expectations to the visit. They expect to have a nice time with their fellow visitors, and if these include children, adult visitors are typically quite preoccu-

pied with them (ibid: 36). Children's expectations differ from the expectations of adults, they are not as socially oriented. Children's interests and concerns evolve around their favorite exhibits (if they have been to the museum before), and around the gift shop and food. Children's expectations do not depend on whether they are going on a school trip or on a family visit. The expectations of children going with their family and the expectations of children going on school trips are more similar than the expectations of children going with their family compared to the expectations of adults going with their family (ibid: 36).

Museum visits may be memories for life. They are out of the ordinary experiences, which stand out as something special in everyday life. Falk and Dierking note that traditionally, understanding the long-term effects of museum visits, is related to the effects in terms of learning (ibid: 97). The authors advocate for a broad definition of learning, in order to encompass the richness of museum experiences, and they also stress that museum learning must be seen over lengthy spans of time, as opposed to cognitive measurements of whether a museum visitor has built more specific knowledge of a given topic. The authors argue that museum learning is a complex, interactive experience, which may have profound and durable effects. It is important to understand learning in various ways, and thus to consider concept learning, social learning, aesthetic learning and spatial learning (ibid: 125).

To understand museum experiences, Falk and Dierking propose a model called the *interactive museum experience* which stresses that three central components and the interaction between these constitute the museum experience. Falk and Dierking stress the importance of the *social*, *physical* and *personal.*

Personal context

Museum visitors come to the museum with various expectations about the visit and with various previous museum experiences, and these personal factors shape the museum experience. The personal context is the "personal reservoir of knowledge, attitudes, and experience, influenced by expectations concerning the physical characteristics of the museum, what she will find there, what she can do there, and who is accompanying her on this visit. All these factors merge to create an agenda for the visit." (ibid: 25).

This agenda is important in determining the nature of a visitor's museum experience. Hopes and expectations vary from visitor to visitor, and these hopes and expectations are important for how the visitor experiences the visit. Most commonly, museum visits are carried out as a social activity, and this implies that social expectations form an important part of personal expectations.

Social context

The social context deeply shapes the museum experience. Going to a museum is a social, leisure activity. This implies that fellow visitors' preferences and experiences are an active ingredient in each person's museum visit. According to research by Falk and colleagues, families spend 15-20 percent of visiting time on family interaction, and another 2 to 5 percent attending to people outside of their group (ibid: 45). Families frequently use exhibited objects as inspiration for making conversation about topics which are related to their life outside of the museum. The museum exhibition acts as a springboard for personal communication (ibid: 48). Social interaction is a crucial aspect of the family museum experience.

Children at a museum are more likely to interact with exhibits than adults are. Children like to touch and use objects (ibid: 42f). Family visitors do not read instructions before interacting with exhibits. They interact and by trial and error see if they can get things right, that is: accomplish the desired interaction with exhibits. If this doesn't work they discuss amongst themselves, and then try again, and ultimately as the last option, they read instructions for what to do (op cit). This gives an impression of how families act during museum visits, and points to how important it is that exhibits are easy to understand without prior introduction.

The family visit is the most common type of museum experience, but another very important type of visit is the organized school trip. Visiting a museum as part of an organized school group may powerfully influence the museum experience (ibid: 41). In a study of children's preferences for school trips, children say that they enjoy seeking out new information, and that they prefer sharing this information with others instead of listening to docents (ibid: 51). According to this study, children like to participate in cooperative learning experiences, and according to another study peer interaction is an important outcome of school trips to museums (ibid: 49).

Concerning school trips an interesting finding made by Falk and colleagues is that highly novel settings – such as a museum - may create considerable anxiety for young children, and that children cope with this anxiety by social affiliation – by seeking out their peers. Children in novel settings do not learn new content which is presented by a teacher or docent. Children spend their time and energy on dealing with the environment, they do this by social affiliation, and this has the result that they are not receptive to learning new content presented by museum staff or familiar teachers (ibid: 57).

Physical context

According to Falk & Dierking, the physical context provides many of the constants of the museum experience (ibid: 11). Studies of American museum visitors have shown that visitors, regardless of exhibition design and content, tend to turn right when they enter a gallery, and that they are 'pulled' out of exits – they will exit the first available door. Furthermore, studies have shown that exhibit placement has an influence on visitors – first floor exhibits are more heavily visited than upper floors of an exhibition, and exhibits closer to entrances are more heavily visited than exhibits further in. Also, the size of the museum has an influence on visitor behavior – visitors to small museums spend more time on each exhibit than do visitors to large museums. So regardless of exhibition content visits have a pattern of both *time* and *movement*, placement of exhibits define how much attention they get, as does the size of the museum building.

An interesting point made by Falk & Dierking is that various research has shown that visitor behavior is *independent* of the content of the museum. Museum visitors deal with a museum in patterns, and these patterns are not determined by the content of the exhibition, but are better understood in terms of a pattern over time, from the initial energetic start where visitors take their time and focus on exhibits, to the later more brief and unfocused interactions (ibid: 56). The typical museum visit for first-time and occasional visitors has four components: 1) orientation (lasting three to ten minutes), 2) intensive looking (lasting fifteen to forty minutes); 3) exhibit cruising (lasting twenty to forty-five minutes; 4) leave-taking (lasting three to ten minutes) (ibid: 58). This adds up to a visit duration of between 40 minutes and 1 hour and 45 minutes.

There are also specific patterns to the visits carried out by frequent visitors, and by visitors on school trips. Frequent visitors do 1) intensive looking, and 2) leave taking. Groups on school trips have 1) a long period of guided, intensive looking, and 2) a brief period of free exhibit cruising (op cit).

Falk and Dierking point out that it is beneficial to consider the physical and the social not as separate, but as working together to form a physical/social context: "The physical and social contexts are extremely important in shaping the museum experience. Working together, the physical and social contexts tend to channel visitor behavior into a few predictable pathways." (ibid: 55)

In conceptualizing how visitors are influenced by physical space, Falk & Dierking use the term *setting*. The physical and the social are combined in the setting, and the setting heavily influences what people do. The setting of a cinema elicits appropriate cinema behavior, the setting of a shopping centre elicits specific

shopping centre behavior (strolling, window shopping, people-watching, eating and shopping) (ibid: 63). The term is based on research which has shown that children's behavior can be predicted more accurately from knowing the situation children are in, than from knowing individual characteristics of the child. This research has been further tested to see if it also applies for adults, and it has been shown to hold true. People tend to behave in accordance with the social/physical setting, regardless of individuality. Situations predict behavior, and museums are a specific kind of behavior setting, which elicits specific types of action (ibid: 65).

More on families in museums

In a survey of visits to the Natural History Museum, London, McManus (1994: 82) found that 68.2 percent of visitors to the museum formed part of a cross-generational group which included children. This implies that the major part of museum visitors are not the informed and educated adult which curators according to McManus tend to envision as their target public, but a cross-generational mix, either in the form of a family or a group of children with teachers. McManus points out that the family is a social unit which cannot be broken down into its constituent parts. A family is a social unit which has distinct patterns of action. According to McManus the family acts as it does because it includes children, but the visit is not defined by the child alone, but by its cross-generational constituency. Families seek pleasure and enjoyment from their visit, alongside a generally educational experience. McManus points out that this expectation of leisure is overlooked in museum research and practice, which tends to focus on the educational agenda. Families want museums to be relaxing and leisurely environments for social activity. Museum professionals and researchers want visitors to be educated at museums (McManus 1994).

The educational role of the museum

There is a strong focus on the educational role of museums in contemporary museum studies and practices (Bayne, Ross and Williamson 2009; Blewitt 2004; Galloway & Stanley 2004; Macdonald 2005). This interest is coupled with a broader reformulation of museums' role in society, where it is argued that museums should move away from being elitist, exclusive and socially divisive institutions (Ross 2004). Museums are framed as educational settings.

Bayne, Ross and Williamson write: "… the shift of focus away from object toward subject – away from the collection toward the user-learner – is a profound one[…]. The foregrounding of subject over object enacted in the museum policy

context has echoes in current constructivist educational orthodoxy, in which construction is privileged over transmission – the learning processes of the individual (the subject) are considered to be a more appropriate focus for learning design than the body of knowledge (the object)."(2009: 111)

Bayne, Ross and Williamson point to a constructivist orthodoxy, and this rings true with my reading of contemporary museum research. The constructivist approach predominates and with this the visitor is understood in terms of learning and active meaning making. When the museum experience is framed as an educational experience, the visitor is framed as a learner (Falk & Dierking 1992; Hein 1995; Hooper-Greenhill 2006a).

Constructivist learning theory stresses that the human subject is continuously shaped and reshaped through interactions with other people and through involvement in social activities. The learner actively constructs meaning out of experience (Hooper-Greenhill 1995: 11; Hein 1995: 189). Ideas from writers such as Dewey, Piaget and Vygotski cluster around the idea that in order to understand learning it is of central importance to focus on the learner's meaning making, instead of on the content to be learned (Hein 1995: 189). This implies that instead of focusing on the intentions of the educator, focus should be on what the visitor does to make meaning.

The exhibition should be understood not as a place for teaching, but as a place for learning, and as Hein points out these two are not the same, nor necessarily related. Situations that allow and encourage learning are often open, ambiguous and able to be manipulated by the learner, and because of this openness and flexibility, it is very difficult to predict what meaning visitors will make in a situation, and what they will learn. A rich and complex environment which according to Hein is a good place for learning, for these same reasons makes it very difficult to predict what meaning visitors will make. A rich and complex environment can lead to various types of interaction, and thus have the inherent possibility that the learner will focus on other aspects of the situation than those which the educator finds central (Hein 1995). This plurality of meanings is also pointed out by Hooper-Greenhill (1995) as an important aspect of visitors encounters with an exhibition. Some people will see one thing, others will notice something else.

Visitors actively construct the exhibition

The stress of the educational role of the museum leads to a specific image of the visitor, as *the active meaning making visitor*. Visitors are active interpreters. They make sense of museums by using their own interpretive communities

and repertoires (Hooper-Greenhill 2006: 236). As they experience the museum visitors simultaneously are trying to make sense of this experience. Meaning is produced from interpretive activities, and actions are taken in accordance with the interpretive acts and the produced meaning (Hooper-Greenhill 2006a: 237). Hooper-Greenhill points out that when visitors meet exhibited objects, these objects and information about them are fitted into the visitor's existing scheme of knowledge. Visitors use what they already know to give meaning to an object. The object is given meaning by being brought into the visitor's world-view. This implies that meaning which is encoded into displays is seen from a perspective, the perspective of the visitor. If visitors see things which they don't recognize, or which don't mean anything to them, and if these objects are not supported in another manner, for example by texts, then the visitor will link up to the exhibit in another way than the one intended by curators, or perhaps will not link up at all. (Hooper-Greenhill 2006: 237). Each person has a specific pattern of knowing, but this pattern is also built up in negotiation with the communities which the person participates in and belongs to. Different communities of interpretation assign meaning from different points of view (Hooper-Greenhill 2006: 236).

"The meaning that is produced is negotiated, provisional, and situated; it is enough to enable understanding and action at that time and in that place, to satisfy contingent curiosity or need related to the specific requirements of the time (to buy a pair of shoes, to catch a bus, to make sense of a display)." (Hooper-Greenhill 2006: 237). When visitors make sense in an exhibition, they do so in a make-do sort of way. They produce provisional meaning, they make enough meaning to handle the situation they are in.

Exhibitions

The preoccupation with the educational role of the museum and the museum visitor as a learner is related to the fact that central museum activities are collection and analysis, gathering and creating knowledge. Exhibitions are both "products of research", as Kaplan notes (1995: 37), and they are communicative media.

A common analytical approach to exhibitions focuses on their semiotic and political dimensions and carries out a criticism which focuses on the way 'truth' is established in/with the exhibition, and seeks to show structures of authority and power which are not visible at a glance. An example of this kind of analysis is Haraway's essay "Teddy Bear Patriarchy: Taxidermy in the Garden of Eden, New York city, 1908-1936" (1989). In the essay Haraway carries out an historical analysis of the American Museum of Natural History focusing on the

hunting and taxidermy of Carl Akeley, and on the processes of purification and othering which are involved both in the taxidermy mounts, in the dioramas, and in biographical accounts of Akeley's life. Among other things, Haraway shows that Akeley's practice of taxidermy was a practice which strived for perfection in its representation of the 'typical animal'. On a hunt an elephant with asymmetrical tusks is rejected for example, despite an impressive size. Furthermore, the 'typical animal' has to be a male, it is an unfailing pattern: the group of animals in dioramas is centered on a prime male specimen; this is *the* animal incarnate (Haraway 1989: 40).

Museums of natural history are considered as science museums (Hooper-Greenhill 1995; Macdonald 1998), and to a certain extent tackle topics which relate to contemporary scientific debates, for example that of climate changes, which Naturama curated a temporary exhibition on in 2007/2008. Nevertheless there is an incongruity between the contemporary science of biology, and the version of biology which is presented in natural history museums. Exhibitions tend to express a somewhat limited scientific perspective, which according to Kristensen rightly is called 'natural history', although this term has outlived itself from a scientific perspective (1993). The representation made of nature and animals is orderly, peaceful, aesthetic and sensual, and avoids controversial issues of animal or eco-system rights or other more explosive topics.

Haraway's text on 'Teddy Bear Patriarchy' is an example of analysis which seeks to disturb this kind of romantic representation by engaging with an exhibition from a critical perspective (1989). Other examples of cultural criticism which aims at de-masking exhibitions are found in the work of Bennett (1995), and of Bal (1996). This kind of analysis focuses on exhibitions as makers of culture, and new museology issues of the cultural and social responsibility of museums is related to such cultural criticism. Such approaches are concerned with 'the politics of display' and with 'exhibiting exhibition' (Macdonald 1998; Basu & Macdonald 2007).

The pressing acknowledgement that the presentation of knowledge which exhibitions carry out, is always partial and in no way neutral is connected to what is called a 'crisis of representation' (Basu & Macdonald 2007). Exhibitions do not merely display and disseminate already existing, preformulated knowledge. Exhibitions generate knowledge (Basu & Macdonald 2007; Kirshenblatt-Gimblett 1998). The 'crisis of representation' which is found in relation to exhibition practice, is acutely present, and perhaps actually originates from, anthropology, where the problematic of representation has been debated since the 1980s and onward,

and which significantly has marked the way in which research is written, and specifically how the researcher is written into or out of ethnographic accounts (Geertz 1988; Van Maanen 1988; Rosaldo 1989; Sacks 1995; Behar 1996; Czarniawska 2004).

"It is no longer tenable to claim that one can represent neutrally, objectively, or impartially – whether in an exhibition or in an ethnographic monograph. All representations are socially, politically, ideologically, institutionally, and technologically mediated. Exhibitions [...] must be understood as sites of cultural mediation; and mediation, furthermore, must be understood as a process that partly constructs that which it mediates," write Basu and Macdonald (2007: 11). Exhibitions present knowledge, but this presentation is simultaneously a construction of that which it presents.

Analysis can unravel the way in which truth and knowledge are established in science communicating media, such as an exhibition by critically reading the exhibition for what and how it represents, seeking to unsettle hegemonies or one-sided accounts as done by Haraway (1989). Analysis can also seek to unravel the processes which knowledge in science communication is produced through, highlighting the multiple processes of negotiation which are involved and the shaping power of the medium in which knowledge is communicated. This is what Macdonald does in "Behind the scenes at the Science Museum" which is an inquiry into how expert scientific knowledge is translated into knowledge for the public, and what kind of demands the exhibition as media makes on the representation and understanding of knowledge (2002). These are two approaches to exploring exhibitions as sites of mediation, a third way is to shift focus from the exhibition to the visitor, and with this to the knowledge production and meaning making which occurs in encounters between visitor and exhibition. That is what this thesis does.

Methods used in visitor studies

Visitor studies has grown as a distinct area of research since the 1980s; there has been considerable debate about how such studies should be carried out, both qualitative and quantitative methods are applied, and methods for research are still being developed. Hodometers have been used for measuring audience movement in galleries, hidden microphones have been used to record discussions at particular exhibits, and video recording has been used to track visitor's actions (Hicks 2005; Macdonald 2005; Hooper-Grenhill 1995). A small number of studies have focused on non-visitors, asking why people do not go to museums, using

focus groups and other market research inspired methods (Hooper-Greenhill 2006b). Some visitor research attempts to develop scales or typologies for visitors or potential visitors grouping them for example as investigative, enjoying, scanning or cultivated (Grøn 2007: 51), or as 'butterflies', 'ants', 'fish' or 'owls' (Macdonald 2002: 217). Research methods which are frequently used are questionnaires, interviews, observation and focus groups. The quantitative strand of museum visitor studies typically provides demographic information such as age, gender, ethnicity, education and social class. Several large-scale studies of this sort were carried out in the 1980s and 1990s, reports Hooper-Greenhill (2006b). The most common methods used in the research I have reviewed are *interview* (Hicks 2005; Beaumont & Sterry 2005; Bagnall 2003; Blewitt 2004; Macdonald 2002), and *observation* (Illeris 2006, 2009; Beaumont & Sterry 2005, Blewitt 2004; Macdonald 2002).

Although the Natural History Museum in London in the 1970s did pioneering work on visitors (Hooper-Greenhill 1995), the research I have encountered on natural history museums reflects the general tendency in museum studies to focus more on objects, collections, curatorial intent and professionals than on visitors, an illustration of this is that a 2008 special issue of Museum & Society is on museums of natural history, but visitors are not mentioned as a central topic (Alberti 2008).

Research or evaluation

Visitor studies may be distinguished as consisting of two strands *research* and *evaluation*. Bicknell points out that research asks the question "what is the nature of the museum experience", whereas evaluations ask "is this exhibit or programme doing what its developers intended it to do?" (Bicknell 1995: 282) Hein makes the same distinction between visitor studies consisting of *evaluation* with the purpose of judging the exhibition and more open-ended ethnographic *research* (Hein 1998), as does Hooper-Grenhill (2006b).

According to Hooper-Greenhill, the research oriented strand of museum visitor studies is typically social science research originating from universities, often in the form of theoretically informed in-depth studies which are more concerned with understanding than with producing management or policy-related information. According to Hooper-Greenhill, this kind of research emerged because testing how much visitors had learned from an exhibition, did not take the experience and agency of the visitor sufficiently into account. Hooper-Greenhill remarks that there still only are few studies which build the in-depth and rich understanding

of museum visits, which she urges as being important in order to become more visitor-focused (2006b). This point is also made by Falk and Dierking (2008).

An example of an in-depth ethnographic study is the already mentioned "Behind the scenes at the Science Museum". Macdonald's ethnography primarily is about the work that goes on behind the scenes, and as such is not a visitor study, but one chapter does focus on visitors' perspectives on the exhibition and draws on qualitative interviews and observation carried out in the exhibition (Macdonald 2002: 217ff). Using observation and interviews is not remarkable in itself, Hooper-Greenhill (2006b) points out, but deep, theoretically informed analysis of such data, as it is carried out by Macdonald, is. Macdonald uses actor network theory as a defamiliarizing strategy which helps take into account the actions of the non-human as well as the human, and asserts that this does more empirical justice to the case than would have been achieved by considering only human agency (Macdonald 2002: 6).

There is an increasing number of in-depth qualitative studies in a Danish context. An example of this kind of work is Daugbjerg's research on visitor's experiences at the heritage site Dybbøl (2008). Focusing on visitor practices at two different institutions devoted to telling the story of Dybbøl, Daugbjerg analyses the relationship between sensuous experience and rational enlightenment. Daugbjerg uses a study method which is also used in this thesis - that of recording visitor experiences with video-glasses, which Ingemann was the first to use in a Danish context. For examples of the use of video in the research of visitor experiences, including the use of the videoglasses which are used in the present ethnography, see Gjedde and Ingemann (2008).

In the article "Accessing audiences: visiting visitor books" Macdonald notes that combining different methods and sources allows fuller and more nuanced access to visitor understandings and experience (Macdonald 2005: 120), and in this context points to the relevance of considering how the content of visitor expression is shaped by the format in which it is made. Macdonald suggests that experiments be made with drawing on various sources of data, and as an example of this mentions visitors books as a source of data.

Hooper-Greenhill sees the research oriented strand of visitor studies which builds accounts of visitor's meaning-making in encounters with an exhibition, as related to a shift from a transmission oriented model of communication where visitors are seen as receivers of messages, to a receiver oriented or transactional model (Hooper-Greenhill 1995). Macdonald also makes this distinction (2005). Hooper-Greenhill argues that museum exhibitions be considered as mass media

devised to communicate with large audiences, and suggests that they be evaluated for their ability to do so, and that inspiration for research methods may be found in media and communication studies (1995).

Media researchers Schrøder, Drotner, Kline and Murray (2003) sketch out four approaches to empirical research on audiences in media studies: media ethnography, reception research, survey research and experimental research. According to the authors, audience ethnography is particularly well suited for grasping the complexity which may be involved in media use, for example enabling accounts of the interrelations between geographical and mediated spaces as they are enacted in practice. The primary method used in the ethnographic approach to studying audiences is participant observation.

Rounding up

This chapter positions the thesis in relation to museum studies, reviewing this field. It does so, knowing that there is a large body of literature which with benefit also could be reviewed. The thesis is a social science project, primarily growing out of the discipline of sociology, but also influenced by anthropology and geography. The topic of the thesis thematically relates to a number of sub-fields or study areas: museum studies, leisure studies, tourist studies, experience studies, education studies, interaction design, design and architecture, childhood studies, media and communication studies, cultural studies, organization studies, and furthermore each of the studied portable objects brings with it a series of potential study areas: animal costumes may be staged with performance studies and dramaturgy, as well as social psychology on play and imagination; mobile phones call out to new media studies, technology studies, as well as to research on digital photography; exercise pamphlets may be inscribed in literature dealing with textuality and inscription, as well as science communication; furthermore the exhibition asks to be mounted as science communication, media, didactic, design, architecture and natural history.

Although analytical frameworks could be developed for each of the portable objects, as well as for the exhibition, this is not done. They are all explored with a point of departure in the ANT theorization of mediation and multiplicity, which now follows and which forms the central theoretical foundation for the thesis. ANT is used as a position which points to a specific topic of interrogation, a conceptual luggage and a way of going about this interrogation which is relevant to an inquiry into mediated museum encounters and to museum studies.

theorizing mediation and multiplicity

an island of order in a sea of disorder

theoretical buoys

a list of floating concepts

Ontology. An island of order in a sea of disorder

There is an ontological foundation for this work which briefly is sketched out.

The dissertation engages with three philosophical ideas about social reality: that it is always becoming, it is relational and it is multiple.

Actor network theory draws on Whitehead's process philosophy to develop the ontological position that social reality is fluid, on the move, in constant process (Blok & Jensen 2009). Process philosophy or 'an ontology of becoming', is the conviction that reality is always in dynamic change. This stands in opposition to the belief that reality consists of permanent substances. Instead of change being perceived as something which passes over substance and stability, the relation between change and stability are reversed. Stability emerges against a background of process, change and movement. This idea ties in well with Michel Serres' philosophy (1985/2008, 1982/1995, 1993/1995).

Serres' ontology is an ontology of relations and multiplicities. In Serres' philosophy, order exists against a background of disorder. Tumult, whirl, confusion, clamor and hubbub all precede tidiness, order, alignment, composition, symmetry, pattern and structure. Order is an accomplishment. For this reason it is of central interest to explore how order is established, and to explore relations between various orders. These relations can be explored with a range of terms, namely as orders rubbing up against each other, kneading, friction, points of connection, exchange and interference, and as processes of mingle and mediation (Blok & Jensen 2009). Serres points to multiplicity as a new object for philosophy, contending that multiplicities are commonly shoved under unities, they are made singular, and that this is problematic because it ignores that unity is secondary to multiplicity, chaos and noise (Clayton 2007; Serres 1982/1995).

These philosophical ideas may be translated into empirical work by studying multiple, becoming, overlapping and interfering practices. John Law argues for practice studies, giving practice the status of the site where becoming, relationality and multiplicity occur. Law says: "...it is the *practices* (including the people) that come first. It is their materiality, their embodiment, their diurnal and organizational periodicities, their architectural forms that are central. And those practices are often pretty obdurate. In this way of thinking practices make the

world: cups of water, or software and shady places out of the strong sun are busy acting here, along with people. So it is not simply a matter of *personal* exploration or construction, and it is not even a matter of *social* construction: society does not drive anything. Rather it is a *matter of materially heterogeneous ordering and re-ordering*, where, however, that reordering is always in tension."(Law 2007: 145, italics in original).

Reality is a continuous effect of practice; reality emerges as it recurrently is enacted in practice. This implies that reality is emergent and multiple (Law 2004). There is always an already existing practice or sets of practices, but practices are also always becoming (Verran 2007: 113). Practices are in tension: "practices overlap in many and unpredictable ways, so there are always interferences between different realities." (Law 2004: 162). Multiple practices overlap and interfere with each other, and in these interactions different realities are made present – and absent. Realities are intertwined, interactive, shape shifting, and indefinite.

Mol and Law have formulated their empirical studies based on an ontology of multiplicity (Law 2002, Law 2004; Mol 2002). Mol explains that an assumption of metaphysical singularity is the belief that there is one real world, 'out there' to be known, we may have different perspectives on it, but it is believed that there is *a foundation* to be known, there is a single reality. In contrast to this, a position of metaphysical multiplicity argues that there is no unchanging foundation which we come to know something *about*, and which we may have different perspectives *on*. There is no foundation of inaccessible realness to refer to. The different versions of reality are in themselves reality, realities. Reality is crafted through practices of knowing and doing, and different practices assemble different realities (Mol 2002: 11ff.).

Law sketches out three positions, on the one hand *singularity* (which has a tendency towards purification), on the other hand the relativist position of *pluralism* (which has a tendency of making everything as good or bad as everything else), and then an '*in-between position'* which says that "the world, its knowledges, and the various senses of what is right and just, overlap and shade off into one another. That our arguments work, but only partially." (Law 2004: 63). Reality is not a *universe*, but a *fractiverse*: "a world that is more than one and less than many." (Law 2007: 127). Reality comes in partially coherent shapes and patterns, not in utterly disconnected fragments (ibid: 128).

Mol stresses that multiplicity is *not* about different people having different perspectives on the same entity. It is about the same entity being enacted in dif-

ferent versions. There is no singular object apart from, behind, or in the centre of enacted versions of it, no *real* object which different people see in different ways. The object *is* multiple. The object *is* these multiple, enacted versions of it. Objects, subjects, practices, spaces, times and realities come in multiple versions. And with this argument Mol takes us from epistemology to ontology (Mol 2002: 11ff.).

A shift from epistemology to ontology

Law and Urry argue that social inquiry enacts social reality (Law & Urry 2004: 390). Research is performative. Research not only describes what it studies, it also *makes it*, performs it. This does not imply that there is no reality. Reality exists, and one of the ways in which it is made is in research. Reality is a relational effect. It is both real and produced. Inquiry helps produce the realities that it describes, and method shapes it in specific forms. The consequence of this, the authors argue, is that doing research always also involves an implicit or explicit answer to the question: what kind of a reality does this research enact, what kind of reality do I as a researcher want to try to enact?

Law and Urry argue that conventional methods in sociological inquiry create singular worlds and worlds which rest on an assumption of Euclidean space. These methods do not resonate with a number of important realities. They deal poorly with fleeting, distributed, multiple, sensory, emotional and kinesthetic realities (ibid: 403).

Law and Urry argue for research practices which engage in the enactment of multiplicity, which help make multiple worlds. They base this argument on an ontological position of multiplicity, and say: "The shift is from epistemology (where what is known depends on perspective) to ontology (what is known is also being made differently). It is a shift that moves us from a single world to the idea that the world is multiply produced in diverse and contested social and material relations. The implication is that there is no single 'world'." (ibid: 397). And these shifts again have profound implications for social science: "They imply the possible need to imagine a fluid and decentred social science, with fluid and decentred modes for knowing the world allegorically, indirectly, perhaps pictorially, sensuously, poetically, a social science of partial connections. Whatever its form, this successor project would not look much like social science in its conventional representational forms."(ibid: 400).

We will get back to this issue, but for now I just want to sum up that the ontological foundation of this work is process, relation and multiplicity.

4
Theorizing mediation and multiplicity

With inspiration from actor network theory and post-ANT studies the concepts of association, mediation, multiplicity and shift are outlined with the purpose of laying out a theoretical foundation for the analysis of how portable objects, visitors and the exhibition relate.

In order to explore how portable objects, visitors and exhibition associate, conceptualizations developed in 'actor network theory' and 'after actor network theory' are lined up in four main themes: *association*, *mediation*, *multiplicity* and *shift*. The work of several scholars is invoked. Actor network theory is divided into two main bundles, 'classic' actor network theory which, under the title of *sociology of association,* is represented by the work of Bruno Latour, and 'post' actor network theory, which is gathered under the theme of multiplicity and is represented primarily by the work of John Law, but also of Annemarie Mol, who is Law's frequent co-author, and Mike Michael. Michel Serres' philosophy is a common foundation for Latour, Law and Michael, and his work also contributes to the conceptualization which this thesis outlines. Other central sources of inspiration for Law, Mol and Michael are Donna Haraway and Marilyn Strathern, whose work also is briefly mentioned. Specific aspects of the mentioned scholars' work are extracted and gathered for a theoretically informed analysis of emergent, heterogeneous and multiple associations in museum encounters.

Actor network theory (ANT) is briefly introduced by pointing to its central strength: a sensibility towards relations between heterogeneous elements. This sensibility is primarily described with the term *associations*, but is also summed up as the ideas of relational materiality and mutual performativity.

The theme of *mediation* is developed by engaging with Latour and Serres. Latour opens up boxes which otherwise tend to be closed, a central black-box being the agency of things. Latour highlights the many ways in which nonhuman

elements participate in what otherwise is contemplated as human action, and contends that objects should be considered for their agency, for how they contribute to action. This may be done by contemplating them as *mediators* which create links between otherwise separate entities, but which simultaneously transform the linked. According to Latour and Serres to mediate is to associate *and* transform.

The theme of *multiplicity* is unfolded by following Law and Mol, the central point being that in practice multiple logics, orders and patterns may be at play simultaneously. This implies that a space may be conceptualized as multiple, overlapping spatialities, and that a person may participate in several overlapping and sometimes conflicting enactments. Multiplicity in relation to the human subject is substantiated with Haraway, Strathern and Michael.

The theme of *shift* becomes central when mediation and multiplicity are at play simultaneously in relation to a human subject. One person may become an intersection between multiple mediations, a point of friction where different orders rub against one another. For this reason it becomes necessary to seek out ways to conceptualize the relations between various associations, and how shifts between them occur. The work of the previously mentioned scholars is drawn together and supplemented with Serres' philosophy of mingled bodies which explicitly deals with transformation and shift.

The thesis engages with central ANT and post-ANT themes. It inquires into how things participate in shaping social order, and it deals with the multiplicity, coherence and interference between different socio-material orders. The first is central in Latour's sociology of associations. The second is central in post-ANTs, exemplified by the work of Law and Mol.

Association

The task of sociology according to Latour is to *trace associations* (2005:9). Latour argues that social order is achieved in relations of heterogeneous entities, and that the role of 'things' in stabilizing the social is widely overlooked. For this reason, order should be explored by tracing heterogeneous associations; attention should be paid also to nonhuman elements. According to Latour a problem with contemporary sociology is that it has predefined categories for what 'the social' is, and for how the order of 'the social' is achieved (Latour 2005:9). To understand how order emerges, it is necessary to include all of the elements which participate in creating this order.

Intertwined sociality and materiality

Latour stresses that things participate in the creation of social order. Humans and nonhumans are entangled and they together constitute order: "We are never faced with objects or social relations, we are faced with chains which are associations of humans (H) and nonhumans (NH). No-one has ever seen a social relation by itself… nor a technical relation… Instead we are always faced with chains which look like this H-NH-H-NH-H-NH…" (Latour 1991:110)

Latour contends that order should be traced as a relational achievement. Any kind of order, coherency or pattern emerges as a result of heterogeneous assemblages; gatherings of mixed elements. Order and coherency are an effect of stabilized relations between various entities, material and conceptual, human and nonhuman.

Although nonhuman elements are given considerable attention in Latour's sociology, it is important to note that it is not a sociology of materiality, it is a sociology of associations, relations, connections, links, assemblages and networks. Actor network theory is a fundamentally relational sociology (Latour 2005:9). It is a sociology which is based on an ontological premise of relationality. Focusing on the influence of Serres, it may be called a sociology of the spaces-in-between. The term actor-network is devised to stress the *relational* character of all sorts of achievements. An actor is always also a network, an association. Elements can gather into coherent forms, but this does not change the fact that all stable entities consist of relations.

Underdetermined action

Latour points to a specific site where we can look for associations, and that is in action. If we look at action and how action emerges, we will see how fundamentally intertwined the human and the nonhuman are. The separation between subject and object is superseded in action. For this reason Latour argues that in sociological inquiry *action* should be what he calls *underdetermined* (ibid: 45). This means that sociology should inquire into action, how action comes to be, *as an effect*, as an event and a surprise. Sociological inquiry into action should happen with an open uncertainty about who or what is acting because action is also a relational achievement. It is an event which emerges out of the relations between heterogeneous entities, as a gathering of heterogeneous entities. This gives an image of interaction as a field of gravitational forces, entities pulling at each other, pushing for each other, pushing for action.

"An 'actor' in the hyphenated expression actor-network is not the source of an action but the moving target of a vast array of entities swarming toward it." (ibid: 46). This is a central point: an actor is not a source of action. The capacity to act does not exist as an essence, resting in each actor as a capacity which that actor holds. No, it emerges relationally, it appears in relations, in associations. Analysis should focus on how entities gather, how they associate into action – and include all participants, human and non-human, everything which co-constitutes action. Neither humans nor things act 'alone'. Action is realized, made real, in associations. Action is a relational occurrence (ibid: 63f; Orlikowski 2007: 1438).

According to Latour there are two opposing positions to how interaction between people and things is conceptualized, and none of them is right. One is social determinist and the other is material determinist. The problem with social determinist thinking is that objects are rendered invisible, they are not ascribed a role in the performance of social order. Things are viewed as inactive, they are the passive background for human action.The only role granted to objects is that of symbol. The problem with material determinist thinking is that the will and intention of human beings is rendered to null. Humans just fill in the spaces which things indicate for them (Latour 1993: 3f.).

Social determinism	**ANT**	**Material, technical or architectural determinism**
Things are inactive and passive background for human action	Things are participants in the course of action Things may - authorize - allow - afford - encourage - permit - suggest - influence - block - render possible - forbid - etc.	Things determine human action

Figure 2. ANT between determinisms. *Overview of two contrary and equally determinist positions on the interaction between people and things, and the in-between position of actor network theory. The table is an elaboration of points made by Latour (2005: 72).*
(Previously published; Svabo 2008: 164).

Sketching out the poles with an example of a person and a gun, Latour points out that a social determinist account would say 'the gun is a neutral carrier of will'; it adds nothing to the action, and on the other hand the materialist account would say that the gun kills; the gun 'instructs, directs and pulls the trigger by its own presence'. Latour points out that neither guns nor people kill, but that gun-people kill (ibid: 4). The positions may be illustrated as shown in figure 2.

Latour places actor network theory in between the two determinisms and advocates for the inclusion of objects in considerations of the social. Objects participate in social action, they play very important roles in establishing social order, and their contribution may be conceptualized with an array of verbs: They may authorize, allow, afford, encourage, permit, suggest, influence, block, render possible, forbid. Latour positions actor network theory as a sociology, and therefore elaborates more on the problematic aspects of social determinism, than on those of technological determinism (1993, 1996, 2005). Latour speaks the case of objects in a world of sociological inquiry where they otherwise are overlooked. Although this implies granting substantial attention to things, it does not imply that objects are the real origins of human action. Objects participate in the occurrence of action (Latour 2005: 71).

The central point about the interaction between people and things, which Latour's sociology of associations makes, is that human life is deeply entangled with nonhuman elements. The solution to the problem of separating the subject from the object is to look at *action* and the solution to the problem of determinism is to contemplate action as a relational achievement, as occurring in associations.

Actants: the participation of things in action

From semiotics Latour has borrowed an analytical device which helps distribute agency and contemplate the participation of things in action*:* the term *actant*. Latour has it from Greimas' actantial model (figure 3, next page), and it refers to the distribution of agency which is common in many narratives such as fairy tales, fables and fantasy, where dragons, magic wands and other nonhuman entities are perfectly capable of acting (ibid: 54). The term actant distributes agency to both humans and nonhumans. It does not distinguish between subjects as capable of action and objects as incapable of action. In actor network theory referring to an *actant* is a way of superseding the divides between things and people, society and technology, macro and micro.

The actantial model is devised as a tool for analyzing narratives, for analyzing plot and action. An actant holds a position in a narrative plot. Actants are defined

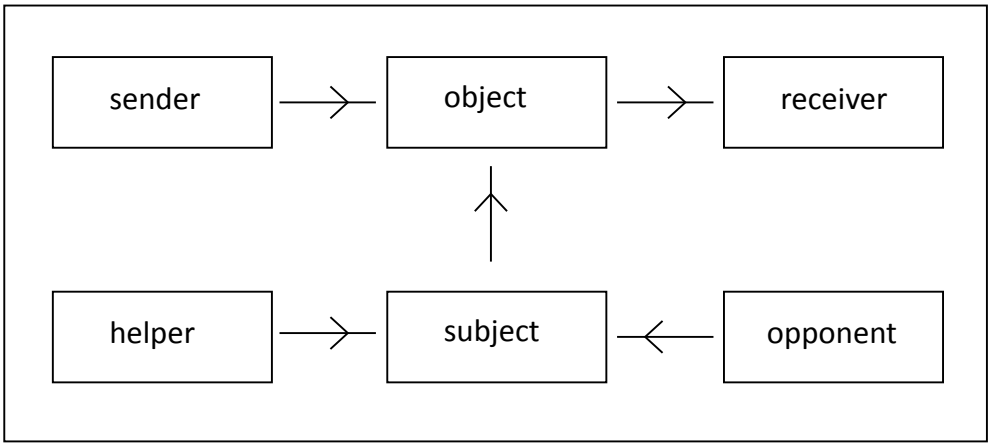


Figure 3. The actantial model. *The actantial model is a model for the analysis of narratives devised by Greimas. The model depicts a structure which is commonly found in narratives where a subject wants to obtain something or has a goal, the object. This goal may be counteracted by an opponent or facilitated by a helper as well as by the sender who has an influence on whether the subject through the course of the story is translated into the receiver of the desired object. Latour draws heavily on Greimas. In Reassembling the Social, Latour calls actor network theory for half Greimas and half Garfinkel, which means it is half semiotics and half ethnomethodology (Latour 2005: 54).*

by the structure of the narrative, they are defined by their position in relation to other actants and to the plot of the story. Actants operate relationally: what role does the actant have in the narrative, what does it do in relation to other actants? In which way does it contribute to the story? The model thus inherently is a relational model.

The model also inheres an opposition of will and intention, an oppositional and goal oriented structure is built into the actantial model. The model depicts a narrative structure of an actant wanting to achieve something and the role of other actants as helpers or obstructers in relation to this goal, for example in a narrative where a princess wants to achieve something and has to fight an obstructer in order to fulfill her goal. Although intention and will are not theorized a priori in actor network theory as independently existing social forces, intention and will often figure in Latour's examples. Many of Latour's examples are about someone wanting to achieve something from someone else. The hotel manager wants the hotel guests to leave the keys at the reception (Latour 1991). Latour wants his son Robinson to sit down on the back seat of the car (Latour 1992). Some undefined organizational actor wants to keep the door closed (La-

tour 1992b). There is a tension here, between on the one hand examples which hold a strong component of intention and will, and on the other hand, Latour's stress that action should be seen as something which emerges in almost magical ways as forces of entities swarm together. Nevertheless the term actant, and the reference to actantial analyses and the narrative category of fairy tales which it was developed to analyze, clearly makes the point that agency is not a human property. Who for example hurts the bear in the following? A princess starts digging a hole because she hopes to be able to catch a bear which is a menace to the villages which neighbor her castle. While the brave princess is digging, the bear scuffles around at the base of a cliff, looking for berries, and then all of a sudden a rock falls off the cliff, and alas, poor bear, hits the bear in the head. Stone-dead. The concept of actants and the inspiration from the actantial model helps consider nonhuman agency. Nobody knows how the story goes. Action is a surprising event, and all actants should be considered in the course of action (Latour 1993:6).

Technical mediation

It is possible to be more technical about this. Latour, along with Akrich, draws up a range of terms for describing the relations between humans and nonhumans and how action prompts are attempted built into things. These terms include the concepts of prescription, program, anti-program (Akrich & Latour 1992: 261f.). *Prescription*[1] is what a device wants actors to do. Inherent is an intention that somebody wants somebody else to do something. This is the *action program*. An action program may be built into an object. Objects may attempt to prescribe action, but users may do something quite different than what makers of an object had intended, or entirely abstain from using an object. Users may have *antiprograms* to the action program. Antiprograms are "all the programs of actions of actants that are in conflict with the programs chosen as the point of departure of the analysis; what is a program and what is an antiprogram is relative to the chosen observer."(op cit). In order to reduce antiprograms, the action program may be attempted built into more than one entity, into chains of actants which enforce each other. *Assemblages* of entities may thus be devised to reduce antiprograms and thus maximize the possibility of obtaining a desired goal.

In a series of lectures called 'The messenger lectures' Latour extrapolates what he calls *technical mediation* (Latour 1993). There are four aspects to technical mediation: 1) goal translation, 2) composition, 3) reversible blackboxing,

1 Akrich and Latour describe prescription as being synonymous with affordance (1992: 261).

and 4) delegation. Let's take the story of the princess again, this time coupling the princess with a gun. *Goal translation* is a term which Latour uses to make the point that the goal of the princess is changed when the princess comes across a gun. First the princess wanted to capture the bear in a hole, now she wants to shoot it and hopefully kill it. The goal of the princess is changed. It is *translated* by the gun.

A second aspect of mediation is *composition*. Latour stresses that although we tend to ascribe action to one actor (the princess kills the bear), this is quite wrong. It is unfair to the gun, the hole, or the rock and the laws of gravity. They all act. A *composition of forces* is necessary to understand action. Action is the property of an association of actants.

A third aspect of technical mediation Latour calls *reversible blackboxing*. This involves several processes. When the princess meets up with a gun this leads to the composition of a new goal, the desire to shoot the bear. The princess becomes a hunter and the gun thus becomes what Latour calls an obligatory point of passage. An obligatory point of passage is a point which all interests (goals) have to pass through. Actants, here the gun, try to make themselves indispensable, crucial, to the course of action. It is so much easier – and more efficient - to shoot a bear than it is to dig a hole and hope that the bear will fall into it. The princess and the gun are aligned. They are punctualized, and blackboxed,[2] unified into a princess-hunter with a gun. The princess wouldn't think about engaging with the bear without the gun. The gun may be described as an intermediary. It loyally carries out the princess-hunter's actions. It is stable and reliable, and she can carry it around with her. It faithfully serves to kill a great number of bears. Until one day where the split of the gun gets stuck. When the split gets stuck, the gun steps from the background to the foreground; all of a sudden it is considered for itself, and it is furthermore considered for its parts. The gun no longer is a coherent gathering, a stable network. The stabilized network which forms the gun is broken, and the parts of the gun become visible. The blackboxed gun has been reversed.

A fourth aspect of mediation is *delegation*. This term is used to describe that not only may human intention be translated, it may also be delegated to nonhuman matter. The princess wants to keep the bear from being a menace to the villagers. She can kill the bear, but she can also do something else, she can

2 A black box is a chain of associations which is considered as one, where the composing parts are not considered in themselves (Latour 1993: 9f).

delegate her intention and will, mix her will into concrete and steel; she can build a cage for the bear and confine it there. The intention of keeping the bear away from the village is delegated to the cage. The intention and will of the princess is *shifted* into the hard reality of bear confinement, and the bear now finds itself as a spectacular attraction in the Princess' growing zoo.

The concept of shifting is a concept which Latour has from semiotics. In literary analysis shifting is used to describe that a narrative may shift from one character, space and time to another. A shift is a kind of displacement. I might ask you for example, to leave the princess and her bear, and instead come with me to a contemporary urban setting, come with me into a museum of natural history; and look: a taxidermist has set up a workstation on the entry ramp to the exhibition, he is sitting at a table and is doing a live taxidermy show, he has a small animal skin in his hands, it is a black squirrel, the man is separating the skin from the flesh, using a scalpel he is meticulously slicing and tearing, slicing and tearing…

Were you as a reader shifted out of one character, space and time and into another? A shift is a narrative transportation into another space, time and character. Latour translates this literary concept from narrative to matter, and uses it as a term which describes that an object may stand in for an actor, an object such as the cage-trap may do the job of the princess, all the time, and without her even being there (Latour 1993: 13).

Mediation

This was 'technical mediation'. The terms *mediation* and *translation* are central in Latour's sociology of associations. When Latour and colleagues Law and Callon developed actor network theory it was also called the *sociology of translation* (Latour 2005: 106). Association, mediation and translation are synonymous. Latour writes: "After Michel Serres I use translation to mean displacement, drift, invention, mediation, creation of a new link that did not exist before and which modifies in part the two agents."(Latour 1993: 5).

Association, translation and mediation mean a linking up of entities and a simultaneous alteration of these entities. Entities which are linked are also shaped by this association, they are altered, changed, translated and mediated. To talk of mediation in a Serres and Latour sense is to talk simultaneously about the making of a *connection* and about the *distortion, displacement, drift and invention* which takes place in the connection. Mediation – the making of relations - has transformative aspects. Mediation is association and translation; invention, di-

stortion and betrayal. Inquiring into associations involves exploring what goes on as entities are linked: how are the linked entities formed in and by these associations? As Latour expresses it in the quote above: how are the linked entities modified in the association?

Mediation is not a simple transportation of meaning, unaltered, through a mute and passive intermediary. "Everything changes if the word mediation fills out a little in order to designate the action of mediators. Then the meaning is no longer simply transported by the medium but in part constituted, moved, recreated, modified, in short expressed and betrayed," writes Latour (1991b: 5).

Latour analytically distinguishes between *intermediaries* and *mediators*. Viewing an object as an *intermediary* means not questioning what the object does, but 'just' seeing it as a transporter of meaning or force without focusing on what the intermediary does to the meaning or force. Intermediaries are seen as loyally carrying out the actions of other actants. Viewing an object as a *mediator* is to question what the object does. The mediator does not just transmit information, the mediator changes what it mediates. Looking at objects as mediators implies considering what it is that they do, how they make relations, form them, shape them, hold them in place. Looking at objects as mediators is to focus on how they transform, translate, modify and distort the action and meaning which they co-constitute (Latour 2005: 39).

Latour spells out somewhat technical descriptions of mediation as consisting of processes of goal translation, delegation, shifting, etc., but it is worth noting that this conceptual line up is developed upon a philosophical foundation which is not at all technical, but on the contrary is free-flowing, impressionist and metaphorical. Latour's concept of mediation grows out of the philosophical work of Michel Serres. Serres crosses and mixes genres; science, myth and literature are placed next to each other, none of them being granted the superior status of meta-language (Blok & Jensen 2009). Serres' writing is saturated with metaphors ranging from parasites to angels.

A central theme in Serres' work is that of the *messenger.* In his early work, the messenger is embodied in the mythical figure of *Hermes*, in later work messengers are explored metaphorically in the form of *angels* (Serres 1993/1995). Common for these messengers is that they mediate between different domains. There is a considerable span from Latour's technical mediation to Serres metaphoric mediation. Describing mediation in technical terms is good for functionalist thinking, for thinking in terms of how to get somebody to do something by delegation to nonhuman elements, as may be the purpose when one attempts

to design an object for example, but a strict technical understanding of mediation has the downside of exactly the same thing, it tends towards functionalism. Serres writing is metaphorical rather than literal, and this moves mediation from technical realism to a more, should we say... magical realism.

Angels

In "Angels: a modern myth" (1993/1995) Serres presents our contemporary world as a world of messengers, he writes about what he calls "the space-time of communication" and "the intercommunication of message-bearing systems." The central metaphor used to describe this world of multiple communication and message-bearing systems is that of angels. The ancient Greek meaning of angel is messenger. Angels embody a message-bearing life in-between. They mediate between distinct worlds, and in this sense they may be seen as legendary, as sign-giving, they are keys to a map, figures which assist in reading the world. Furthermore, angels have the capacity for both being visible and invisible, they can appear and disappear.

The book "Angels" is a dialogue, primarily between Pia who is an airport doctor, staying in the same place, and Pantope, who travels all over the world, but also between Pia and her brother Jacques. In the following excerpt from "Ladders" Jacques does all the talking, but that is not the case in other parts of the book.[3]

Angels. "They slip nimbly beneath theories of sets, they are able to pass through the walls of rigor as easily as through the walls of prisons. The body of angels goes beyond limits; their number makes a mockery of counting; their logic abhors inflexibility. Or rather, they inhabit quite distinct levels, but they move noisily up and down from one landing to another, swamping the intermediate space with the clouds of their presence. Are they capable of slipping in and out of dimensions?

"So, they testify to polytheism in the face of the one single God; they affirm one single god in paganism; they spread pantheism everywhere, in singing in the fields. . . . They testify to the hazy in the face of exactitude; they represent homogenous law within raggedy space; they stitch together tatters, tear the monotone, men before women, males before females, breaths and flows of the world, light of stars, life of animals, spirits of language, they connect the unconnected, disconnect the connected, and between them tie up and untie all orders.

3 Serres writing is a polyphony, it both communicates of polyphony in the metaphor of angels, and it performs polyphony in the form of conversations.

"Never irrational, they create confusion in the rational, which is still going down the straight line of logic and exactitude.

"Angels have always been successful in something that I have been trying to imagine for a long while: a universe which is mixed, dazzling, rigorous, hermetic and Pan-like, serene and open, a philosophy of communication, traversed by systems of networks and interferences, and demanding, in order to be able to establish itself, a theory of the multiplicities, of the chaos, hubbub and noise, that come before all theory."

"Explain yourself," says Pia, slightly mystified.

"A theory deploys, essentially, a system of monotonal ideas. In Greek the word means 'procession': a parade of modest virgins in white skirts, followed by serious-looking beardless youths and doting old men engaged in some ritual; exposed, set to the step, a sweet crowd.

"When necessary, angels are quite capable of arranging themselves and aligning themselves, forming theories or spelling out positions; but under normal conditions their disorder forms a pre-theory, a scattered stock awaiting systematization.

"Before the ordering of turbulence, or after it, what rules is the distribution of hazard and chance.

"Out in the playground, the ringing of the school bell and standing in rows at the classroom door is preceded by the hubbub of playtime; a second ringing of the bell, at the end of lessons, breaks the same ranks, and the hubbub begins again."

"That's a lot clearer," Pia murmurs, brushing her hair back.

(Serres 1993/1995: 91f.)

Disorderly multiplicity

The quote from Angels takes us through a metaphoric contemplation of angels as mediators and intermediaries. A central feature of messengers which is pointed out is that they easily pass between different worlds, 'walls of rigor' as well as 'walls of prisons'. Angels as messengers embody a series of ambivalences and paradoxes, a central one being their own status as simultaneously visible and not. They both make and break connections, they mess up things and create new orders. They are capable of order, procession and homogeneity, but diffusion and disorder is their normality. They embody distribution, hubbub, and turbulent comings and goings. The singularity of one order is dispersed into a disorderly multiplicity which occasionally lines up in order.

Multiplicity

The theme of multiplicity is central in John Law's post-millennium version of actor network theory, which we now proceed to. The 1999 book "Actor Network Theory and After", edited by Law and Hassard may be used as a line of separation between actor network theory and later developments which build on the insights of ANT, but also take off from the single spatial form of the network, and thus take off from classic ANT. These developments may be called post-ANT (Gad & Jensen 2007, 2010).

In "Actor Network Theory and After" Law points out that the central ANT term of *translation* in many analyses had been downplayed, pushed to the background by the figure of the network: "...like some kind of monster, the term 'actor-network' grew, and it started, like a theoretical cuckoo, to throw the other terms out of the nest," writes Law (1999:5). This is problematic and hence, the actor-network monster-cuckoo is abandoned in John Law's work.[4] Regardless of this, Law holds on to other central ANT-ideas, here briefly summarized as the points of relational materiality and performativity.

Relational materiality and performativity

The idea of relational materiality[5] is that all entities take their form from the entities they are related to. This is a semiotic insight, and thus Law calls ANT 'a ruthless application of semiotics' (ibid: 3). Actor network theory "tells that entities take their form and acquire their attributes as a result of their relations with other entities. In this scheme of things entities have no inherent qualities: essentialist divisions are thrown on the bonfire of the dualisms."(op cit). Entities - human and nonhuman - are what they are in *relation* to something else. Everything and everybody is a relational effect. Subjects are relationally performed, they are enacted in practice, as are objects; they stay in shape for as long as their component relations hold together (Law 2002b: 94).

The second central ANT idea of *performativity* is closely related to the idea of relational materiality, and may be seen as a consequence of it. If nothing is

4 Latour in this 1999 publication also buries the actor-network, expressed in an article where he says that there are four problems with actor-network theory: the word actor, the word network, the word theory and the hyphen (Latour 1999: 15). Latour changes his mind and with an apology reinstalls the network in 2005 in the book "Reassembling the Social. An introduction to Actor-Network-Theory" (2005: 9).

5 Relational materiality is also called semiotics of materiality (1999) and later Law refers to his work as material semiotics (2007b), a term which links to the writing of Haraway, Deleuze and Foucault.

anything in essence, if everything is relational, this means that entities (people, things, concepts etc.) come into being by being *performed*.[6]

"… the semiotic approach tells us that entities achieve their form as a consequence of the relations in which they are located. But this means that it also tells us that they are performed in, by, and through those relations. A consequence is that everything is uncertain and reversible, at least in principle."(Law 1999: 4). The interaction between people and things is one of *mutual constitution*, it becomes a relationship of continuous reciprocal performance and enactment. Both subjects and objects assume form, they materialize, by being practiced from moment to moment, again and again. Subjects are performed relations. Objects are performed relations. Things are what they are because they continuously are performed as such.

Departing from the network

The classic ANT study is about unraveling a durable network, about how a coherent actor comes into shape. Classic ANT tales have tended to take the form of heroic stories about single characters (Michael 2000; Mol 2002). But through the past decade in studies which we may call post-ANT, the orientation towards singular, strong and durable networks has been supplemented by an interest in multiplicity (Law 2002, 2007; Mol 2002; Mol & Law 2002; Law & Singleton 2003; Michael 2000; Verran 2007).

Mol (2002: 65f.) tells how both actor network theory and related post-ANT studies depart from Foucault's work. Foucault is abandoned for his idea that a single order of coherent sets of norms is imposed to human subjects in society. According to Mol, this is one of the important contributions of the notion of the network: it is about *relational agencies and associations in practice*. In the network there is not one single order imposing itself onto other entities. The network questions – and abandons – Foucault's structures.

"Latour dissolves the power of logical coherence by arguing that in as far as the world hangs together this is a matter of practical associations. How far these associations reach isn't given with the birth of a new configuration. Unlike epistèmes, networks are open. The elements within a network may link up with other elements, outside the network. But such external links are not different from internal links. They're all associations. Each new and successful association

6 In the last decade in Law's work the term performance has been supplemented by, and increasingly substituted by the term enactment (2004).

makes a network larger."(op cit). According to Mol this is one of the virtues of actor network theory. It does not build the image of superstructures imposing themselves on actors, it does not operate with an idea of internal logic, it is an open figure of practical associations, of things being done in networks. Nevertheless, Mol finds it necessary to depart from the network.

Mol lines out a difference between the work of Latour, and the work of herself, Law and other scholars who are oriented towards multiplicity. They abandon Foucault on the same ground as Latour does, but they take this abandonment in another direction than that of the network, because the network has a problematic homogenizing effect. The latter scholars take a second road from Foucault:

"… however great the difference between the coherence in a network and logical coherence, to talk of "associations" does have a homogenizing effect. Either an association is made or it isn't. An element is either inside or outside a network. Coordination is established or not. There are no distinctive forms of coordination. The second way of abandoning Foucault differs from the first in precisely this respect. It multiplies. Instead of describing a single coherent discourse, or tracing a single large network of contingent associations, it distinguishes many… Many what? There are different answers to this question in the literature. Different ways of multiplying have established themselves side by side." (Mol 2002: 65f).

There is a separating line here, where Mol criticizes the network for its singular and homogenizing qualities. The critique brings with it an orientation towards *more than one* type of order. An early formulation of this is John Law's "Organizing Modernity", where a central argument is for a plurality of orders rather than one (Law 1994).

Plural modes of ordering

In "Organizing Modernity" John Law is concerned with *plural* processes of sociotechnical ordering. Law counters the idea of purity by breaking it down, instead of dealing with one hegemonic order, he is concerned with multiple modes of ordering. A mode of ordering is a recurring pattern in the relations between human and nonhuman entities (Law 1994: 95), and Law looks for plural recurring patterns in the relations between human and nonhuman entities. Law stresses *process* and *plurality* in his approach to social order. Order is always taking place, it is never finalized, it is always in a process of becoming, as order*ing*, and there is not one such order - this, says Law, is 'the dream, or the nightmare, of modernity' (1994: 2). Singular orders are abandoned for the plural, for multiplicity and multivocality.

The problem with singular accounts is that they tend to forget complexity. Bauman's "Modernity and the Holocaust" is mentioned as a classic articulation of important arguments against reducing complexity to singularity, and Mol and Law note that a 'revolt' against simplification is found in various fields of research: the sociology of science, the history of technology, cultural studies, feminism and political philosophy (Mol & Law 2002: 1).

Where Law in "Organizing Modernity" talks of *plural* modes of ordering, the argument has been developed further in collaboration with Mol, and in the post millennium work becomes for *multiplicity*, rather than for plurality. In "Complexities" from 2002, Mol and Law indicate that the rejection of simplicity should not turn into ever-multiplying complexity (2002: 4f.). There are patterns, there is cohesion, and there are orders in the world. The solution to the dilemma between too little complexity and too much complexity is the notion of *multiplicity* (ibid: 7). With multiplicity, the rejection of simplicity does not just turn into chaotic complexity. Multiplicity is not singularity, nor is it plurality. It is in-between singularity and plurality. It is about fractional coherence and partial connections (Law 2004: 62; Mol & Law 2002: 10). Multiplicity is the simultaneous enactment of different versions of an entity; object, subject, space, practice or reality.

"When investigators start to discover a variety of orders – modes of ordering, logics, frames, styles, repertoires, discourses – then the dichotomy between simple and complex starts to dissolve. This is because various "orderings" of similar objects, topics, fields, do not always reinforce the same simplicities or impose the same silences. Instead they may work – and relate – in different ways. This raises theoretical and practical questions. In particular, the discovery of multiplicity suggests that we are no longer living in the modern world, located within a single episteme. Instead, we discover that we are living in different worlds. These are not worlds – that great trope of modernity – that belong on the one hand to the past and on the other to the present. Instead, we discover that we are living in two or more neighbouring worlds, worlds that overlap and coexist. Multiplicity is thus about coexistences at a single moment. To make sense of multiplicity, we need to think and write in topological ways, discovering methods for laying out spaces, and defining paths to walk through these." (Mol & Law 2002: 7f).

Multiplicity is an ontological premise: multiple orders are at play in the world. These orders may be called by several names. The quote above mentions Law's concept modes of ordering. Other terms for orders which Mol and Law commonly use are practices and enactments. These are continuously emerging patterns; what Law calls "processes of materially heterogeneous ordering and

reordering" (Law 2007: 145). Reality is created in continuous processes of ordering and reordering; reality is created in practices and enactments. Practice and enactment are used as interchangeable terms, and these terms are also related to the concept of performance, but Law notes that the term enactment is better than the term performance, because enactment does not connote human action in the same way that performance allegedly does (Law 2004: 159).

Law and Mol point out that it is a goal for social research to depict multiplicity, to craft accounts of social reality which show multiple orders and how these multiple orders coexist, overlap and rub against each other. So the central idea of multiplicity is to look for multiple orders, multiple patterns.

Spatialities

The multiplicity of social reality may be unfolded by exploring it through the notion of spatiality, and specifically by the notion of multiple spatialities (Mol & Law 1994, Law & Mol 2001) Law and Mol argue that social practices perform several kinds of space, the social does not exist in one single spatial form. According to Law and Mol the notion of the network has unsettled the hegemonic spatiality of Euclidean space, of thinking of space in terms of areas and regions. The network has pointed out that space may also be contemplated in terms of networked relations (Mol & Law 1994: 643). Law and Mol argue for a further unsettling of space, contemplating space through the metaphors of fluid and fire, and they assert: more metaphors may be developed (Law & Mol 2001: 616). The argument for why space should be understood in terms of *multiple spatialities* is that just like objects and subjects, space is practiced, enacted. It is the effect of continuous processes of ordering and reordering, and this ordering and reordering enacts multiple spatialities (Law 2000b: 11).

Regional space

Regional space is space which is understood as either two- or three dimensional space. It is also called cartographic space, or Euclidean space. This is the way of thinking of space which we conventionally use in everyday practices. It is an understanding of space where the characteristics of an entity may be defined according to its position on a geometrical grid, and the shape of the entity may be described according to its extension on these dimensions. Regional space is a way of understanding and describing the properties of physical space. Regional space is used to conceptualize specific locations, areas, regions, and the boundaries between them (Law & Mol 2001: 610f; Moreira 2004: 56).

Network space

Network space is frequently enacted in actor network studies. Understanding space with the metaphor of a network is useful for conceptualizing relations between various entities. One of the central points of actor network theory is that an entity holds its shape because a stabilized net of relations performs it in that way, as the durable and fixed alignment of various materials. The idea of network space implies a flattening out of divisions between the global and the local. Both are associated in the network. The metaphor of the network is criticized for naturalizing space into the form of a network and for giving space the figure of centralized organization (Law & Mol 2001: 610f).

Fluid space

Fluid space is a metaphor developed by Mol and Law as an alternative to network space (as is fire space, which follows next). The metaphor of the fluid is developed to show that entities may be performed cohesively in other ways than in a network. (ibid: 613)

"… in a network things that go together depend on one another. If you take one away, the consequences are likely to be disastrous. But in a fluid it isn't like that because there is no 'obligatory point of passage'; no place past which everything else has to file; no panopticon; no centre of translation; which means that every individual element may be superfluous" (Mol & Law 1994: 661).

Entities which are performed in fluidity are coherent and stabilized, like entities which are aligned in networks, but they are stabilized in other ways than in network associations. They are stabilized in fluid associations. In fluid space coherence is maintained by many and varied relations (as opposed to the single and fixed relations of a network). The metaphor of the fluid encompasses the possibility of changes, but in terms of gradual change, as opposed to fire which is about abrupt and sudden change (Law & Mol 2001: 614).

Fire space

Fire space is another alternative to that of the network. Mol and Law are inspired by Bachelard in their development of this metaphor, and from him they borrow the descriptions of fire as an element of passion, sexuality, action, energy, will, anger and creative destruction. Fire is a metaphor for thinking about the relation between presence and absence, for thinking about the gap, difference, and disparity between that which is present and that which is not. With the spatial metaphor of fire the shape constancy of an entity may be understood as a flicker-

ing relation between presence and absence. In this space continuity may be seen as an effect of discontinuity. Constancy may assume the form of oscillation, or abrupt and discontinuous movement. This metaphor is useful for thinking about rhythms. Continuity may be contemplated as the coherency between a centre and the sparks which shoot off from it, like a fire cracker, crackling glints of energy sparking off in more or less random directions, but with this common point of departure. With fire the relation between a single present centre and multiple absent others may be explored (Law & Mol 2001: 615f). Fire associations hold together in flickering rhythms.

Topology: the coherency of shapes

Area, network, fluid and fire describe a way of exploring practice in terms of multiple spatialities. The background for these spatialities is topology, a subfield of geometry which inquires into the continuity of shapes. Topology experiments with stretching and squeezing forms; and deals with under which circumstances a shape holds its form, and under which circumstances it changes form and no longer is homeomorphic. If a shape is broken or torn, then it is no longer the same. If it is squeezed, bent or stretched out, it is still said to hold its form (Law 2002b: 94).

In Law and Mol's social science translation topology is used to inquire into the coherency of various entities. Law for example analyzes how a sales brochure for an aircraft simultaneously enacts multiple versions of the aircraft and makes these cohere into one (Law 2002). Mol analyzes how the illness atherosclerosis simultaneously is practiced in multiple versions and coordinated into one illness in one body (Mol 2002). A central point of interest in Mol and Law's multiplicity oriented studies is how different orders relate and how coherency is coordinated. Topology is useful for thinking about coherency (Mol & Law 2002: 11).

Partial connections

The motto in these different multiplicity/order analyses is that of partial connections, that something may be more than one and less than many. The term partial connections has first been suggested by Donna Haraway, and elaborated by anthropologist Marilyn Strathern (Law 2004: 64). Strathern develops the idea of something being more than one and less than many with her own identities as both a feminist and an anthropologist. Strathern the feminist is not Strathern the anthropologist, they inform each other, they are partially connected, but they are not the same. Strathern has multiple, overlapping identities (Strathern 1991: 36).

Referring to Strathern's example, Mol writes: "Being one shapes and informs the other while they are also different identities. They are not different places the person walks between or can take refuge in. Neither are they alternating facades or two sides engaged in a dialogue. Not two different persons or one person divided into two. But they are partially connected, more than one, and less than many" (Mol 2002: 82).

Law's multiple subject-object relationalities

The notion of partial connections is given an interesting twist in John Law's article "On the subject of the object" (2000) and in a chapter of the book "Aircraft Stories" (2002). Law pushes partially connected, and thus distributed subject positions to include the relational formation between a knowing subject and the object that is known (Law 2000:13). Law focuses on moments of association where a knowing subject and a known object are made together in a single instant. He argues that there is not one type of possible relation between a knowing subject and a known object, and to illustrate this unfolds five different relationalities between a subject and an object, what he calls five modes of ordering (op cit). Law notes: "we are dealing in multiplicity: multiple object-positions; multiple subject-positions" and further points out that it becomes an interesting inquiry how these different modes interact with each other; how they interfere with one another (ibid: 24).

The subjectivity which Law reflects on as being constituted in relation to an object is his own, and the object which he is in relation to is the object of his research, the TSR2 aircraft. Law accounts of conflicting relationalities which made it impossible for him to write about his object of study at a given time; the multiple subject-object relationalities could not be coordinated into one singular account (op cit). The central point in this context is not the specificities involved in these conflicts, but the point that there are numerous possible relations between subjects and objects, and these subject-object relations may be shuffled together in various ways. The various relationalities do not exist in isolation from each other. They are partially connected. Both subjects and objects can participate in more than one order, they can "dodge between and combine ordering modes, being both multiply constituted and multiply resourced" (Law 1994:22). Orders do not have a single actor at their centre. Subject and object positions are enacted along with them (Law 2000: 26; Mol 2002: 68).

Michael's co(a)gent and Haraway's cyborg

Subject-object relationalities are at the centre of Mike Michael's concept of the co(a)gent (2000). Michael draws on Latour, Haraway, Law, Callon and Serres, when he develops a hybrid figure which he calls the co(a)gent. The co(a)gent is a heterogeneous and distributed actor who coheres in action (Michael 2000: 16). Examples of Michael's co(a)gent are a trekker and his walking boots experiencing nature; a father, a child and their stroller; an academic and a computer; and a person, dog and dog lead gathered in what Michael calls a Hudogledog (human + dog lead + dog).

An important inspiration for Michael's work is Haraway's famous figure of the cyborg. The cyborg embodies associations between human and nonhuman elements. The cyborg is a hybrid, a creature which inhabits multiple non-congruent worlds, and which counters the myth of *unity.* It is a figure which embodies and is devoted to *partiality*: "A cyborg is a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction." (Haraway 1991: 149). The figure of the cyborg breaks with the idea that the human person is a coherent unity and with psychological ideas of abstract individuation where individual selves float around in empty space, detached from all dependency or relation to machines or other creatures. Haraway argues that 'the machine' is an integral aspect of human embodiment (Haraway 1991: 181). In "A Cyborg Manifesto" Haraway points out that "a cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of *partial identities* and *contradictory standpoints*." (Haraway 1991: 154, italics in original). Haraway argues that the figure of the cyborg may be a way out of essentialized gender, and thus it may also be a way out of essentialized and purified humanity.

Michael's co(a)gent is a hybrid association like the cyborg. Distribution and heterogeneity are central features of the co(a)gent. The human subject is diffused into interaction with various entities, be they boots, a remote control, stroller, dog lead or dog. Hybrids grow from configurations of diverse entities, which may both be semiotic and material. The separate entities are interwoven, and agency is distributed across them. The action carried out by the heterogeneous associations is joint action, it is co-agency (Michael 2000: 129f).

Michael argues that hybrid associations should be treated as cogent, as unitary coherencies, instead of being contemplated in terms of their constituent parts. Co(a)gents do not *break up* or *disappear* in situations where they are not enacted. When the person, the dog lead and the dog are not together, the

Hudogledog is still there, argues Michael and illustrates this by referring to the relationship between a scientist and a laboratory (in Michaels understanding the scientist + lab is also a co(a)gent). The scientist is not at the laboratory all of the time, but this does not imply that the scientist does not exist while not at the laboratory. Although the components of a hybrid are physically separated, this does not mean that the hybrid is broken up: a scientist does not break up when she is on holiday or bouncing her daughter on her knee, the scientist is just not manifest in these moments (ibid: 131).

When a figure such as the scientist is narrated analytically a condensed account is produced where the scientist appears as continuously coherent, as always present: "We focus upon those instances where the 'actor-of-interest' presents itself and goes about its business."(op cit). The same kind of selective coherency may be performed for other co(a)gents, reasons Michael.

A certain kind of pulse is involved in the existence of the scientist, as it is in the existence of other co(a)gents. When we see one manifestation of agency, we are seeing *one aspect of the whole.* The person without the dog and doglead is an aspect of the Hudogledog. The Hudogledog is still present, although not visible. The components of the hybrid may be seen as different aspects of its existence. From the perspective of the hybrid the human is a component which contributes to its coherence with a fragment of identity and agency.

Michael explores the continuities and disruptions across different hybrids – for example the connections between a father with a baby in a stroller, an academic with a computer, a trekker with boots, a person driving his car to work, and a couch potato. All of these co(a)gents have one commonality, the figure Mike Michael (MM). MM from his own experiences is coherent. He barely notices the various hybrid associations he forms part of, he has a relational contingent coherency (ibid: 144), but he also changes shape as he participates in the various co(a)gents. MM, as the writer argues, is not purely human. He forms part of various hybrid existences and is "thoroughly enmeshed in heterogeneous networks" (ibid: 143). MM passes from network to network, from co(a)gent to co(a)gent as a component, as a fragment of agency and identity. MM is both coherent and variable. The co(a)gents are related, but evidently not the same.

One of the ways in which the various co(a)gents relate is that they spill over into one another. MM takes part of the couch potato with him, when he enacts the booted trekker. The existence of the couch potato influences the trek; one co(a)gent spills into the next. Furthermore, some co(a)gents predominate. Some connections are more partial than others, reasons Michael, borrowing

from Haraway and Strathern.[7] Michael notes that the image of MM moving from co(a)gent to co(a)gent works on an unreflected and somewhat mute background of *space and time,* where space is written of as discreet localities and time as a linear progression. Michael says that this is too simple and suggests that further attempts at conceptualizing hybrid associations such as the co(a)gent might engage with contemplating both the notion of space and time in more complex ways. Shifts between co(a)gents are not cases of MM 'hopping' from one location to another over a linear flow of time, says Michael (2000: 147). It is relevant to contemplate other spatial imagery than that of locality, and instead of thinking of time as a linear progression, patterns, cycles, rhythms and pulses may be invoked for exploring the shifts between co(a)gents.

So directed we shift our weight a little and now go from terms which contemplate multiple coherencies, to tackling 'hopping', transformation and shift. The challenge is to catch multiple, fleeting hybrid associations. This is attempted by pulling together some previously mentioned concepts: the notion of shift as presented by Latour, and Mol and Law's spatialities, and by introducing Serres' philosophy of mingled bodies. These sets of thought provide complimentary ways of describing shifting hybrid associations.

Shift and transformation

Conceptualizing shifting hybrid associations in a way which includes considerations about temporality and spatiality may be facilitated by the concept of shifting. In semiotics, shifting is a spatial, temporal and actorial transportation. It is a way of conceptualizing translocations and transformations; moves across character, time and space. The 'I' in the here and now may be moved – shifted - into another character, another time and another space (Latour 1993: 13). This suggests that time and space may be considered as properties which are enacted along with an actor; that a 'character' comes with a characteristic spatiality and temporality. So, one step for contemplating time and space in complex ways in relation to various hopping hybrid associations is to consider these phenomena

7 Michael points to a difference between Strathern's use of the concept, and the way he adopts it: Strathern analyzes a human subject, Michael extends this to hybridized beings. Michael points to not only distribution, but also heterogeneity – in line with Haraway. Michael contemplates coherence across different hybrid entities and how one person can participate in various co(a)gents. In accordance with post-structuralist anti-essentialist understandings, the human subject is understood in terms of distribution, and as a consequence of the relational materialist ontological position, in terms of heterogeneity.

as being enacted along with a hybrid character. When a hybrid actor emerges, a characteristic space and time also emerge. Actor, space and time go together. This understanding is related to what may be called 'kairotic time'. "Kairós in Greek means 'time, place, circumstances of a subject" (Czarniawska 2004b: 775), and 'kairotic time' is an alternative to 'chronological time'. Chronological time is a measurement of time in mechanical intervals, whereas kairotic time is an ordering of time in accordance with a narrative account (Czarniawska 2004b: 775; Latour 1988: 11).

Furthermore, the spatialities proposed by Law and Mol may be pulled in as ways of adding texture to descriptions of the spatiality and temporality which are enacted along with a hybrid. The hybrid association may be seen as a reality-maker. When the association is in action a characteristic temporality and spatiality are conjured, manifested, blown to life. This may be described with the metaphor of a book: when one hybrid association steps into action a book is opened, and when a shift occurs to another hybrid association this book is slammed closed, and another book is opened. Law and Mol's metaphors may be useful for considering the rhythm of association and dissociation, appearance and disappearance; the rhythm with which books are opened and closed.

In narratives, shifts are initiated by the writer. In complex everyday interactions there is no singular writer. The 'writer' in such interactions is a turbulence of sociomaterial forces. Shifts occur in complex interactions; paraphrasing Latour: between vast arrays of swarming entities (Latour 2005: 46). So in order to understand the 'hopping' of one human subject from one hybrid association to another, we would have to describe the swarms of forces which we find the person in, and describe how, when and where these swarming entities gather in action. Shifts occur as an effect of negotiations between continuously emerging heterogeneous action-associations. 'The writer' is polyphonous, or more appropriately *poly-scriptuous*; everyday shifts emerge as swarms of sociomaterial entities dart for the pen.

Summed up: with the constellation of Latour, Mol and Law it becomes possible to explore shifting and fleeting associations in everyday life in a way which is inspired by narrative shifts; to reflect on spatiality and temporality as enacted along with a hybrid character, and furthermore; to contemplate the shifts as emerging in sociomaterially negotiated fluid and flickering rhythms. Additionally, the conceptualization of multiple, fleeting hybrid associations and the transformations and shifts between them, may be developed further with Serres' philosophy of mingled bodies.

Serres' mingle

Multiple, shimmering relations between the human subject and the world are the central theme in Serres' philosophy of mingled bodies (Serres 1985/2008). Serres highlights shifts, mediations, shimmer and the multifaceted. The central notion of the philosophy is that of *mingle*; an incessant, fluid and flickering blend of human and world. Human and nonhuman are continuously merged and mixed. The human is dispersed into various nonhuman elements, and the senses play a central role in this dispersement, in this propagation. The senses are points of exchange between the world and the body. In Serres' writing the body is changeable, it is mutable, brittle, capricious and impermanent: "…the body is, repeatedly and in the end, the principle of propagation. Serres will have it no other way. The senses are the body forming and reforming itself. As such the body is a miraculous nook in the flux, a negentropic eddy or swirl in the current that traverses it yet which it delays."(Connor 1999: 11).

Exchange and continuous movement are central in Serres' writing on the senses. A lucid example of this is found where Serres lets the sense of touch 'play ball' with consciousness. Try it: take your finger and put it to your mouth. Use your finger to press slightly on your lips. In that moment your lips are an object to the touch of your finger. Now remove your finger from your lips, and instead kiss your finger. Your finger is now an object to the kiss of your lips, consciousness has moved. Consciousness resides in the contact between the finger and the lips.

"The I vibrates alternately on both sides of the contact, and all of a sudden presents its other face to the world, or, suddenly passing over the immediate vicinity, leaves behind nothing but an object." (Serres 1985/2008: 22f.).

The lips and finger may play ball with subject/object-hood. When the finger touches the lips, the lips are the object, the subject rests in the finger. When the lips kiss the finger, the lips are the subject, and the finger is the object. What is central here is not the location of subject and object, but the playing ball: consciousness flares around, it does not reside in one particular location. It comes to being in sensory excursion. Consciousness emerges in its coming and going (Serres 1985/2008: 22f.; Connor 2008:5).

The senses mediate between the world and the I. In sense "I mix with the world which mixes with me" (Serres 1985/2008: 13). Body and consciousness[8] exchange and exceed, they are a turbulence, a whirlwind, on the move, shimmering, meeting: "The body exceeds the body, the I surpasses the I, identity delivers

8 Serres uses soul, I and consciousness interchangeably (1985/2008 passim).

itself from belonging at every instant, I sense therefore I pass, chameleon, in a variegated multiplicity, become halfcaste, quarteroon, octoroon, hybrid…"(ibid: 307). The body is mingled, it mixes with itself and with the world. Body and consciousness blend inextricably. They mix. Sense is both the location where consciousness and body mixes with itself, and where it mixes with the world. Sense is the mingling of body, consciousness and world (ibid: 26).

Sense is a point of exchange

Sense does not belong to the body. Sense belongs to the body and the world. Sense is mediator, intermediary, point of exchange and extension. This implies that sense is dispersed. Sense may be extended into an object, the point of connection between the person and the world may be located outside of the body, in an object, a tool for example. It is the fusion and intertwinement, which Serres stresses: "The hand is no longer a hand when it has taken hold of the hammer, it is the hammer itself, it is no longer a hammer, it flies transparent, between the hammer and the nail, it disappears and dissolves, my own hand has long since taken flight in writing. The hand and thought, like one's tongue, disappear in their determinations." (Serres 1982/1995: 30).

"So what is a hand? It is not an organ, it is a faculty, a capacity for doing, for becoming claw or paw, weapon or compendium."(ibid: 34).

The flowing together in action is stressed by Serres. This applies for an act such as hammering, but it also applies for thought, for thinking. Again it is fusion and intertwinement which is stressed. "… when I think this object, that subject, there is no doubt that I am this subject, that object, if I truly think them; when I think a given concept, I am entirely this concept, when I think tree, I am the tree, when I think river, I am the river, when I think number, I am through and through from head to toe, number. That is the unquestionable experience of thinking." (Serres 1982/1995: 30)

Relation is contemplated not as a separation in object and subject, but as a flowing together, a fusion in activity, be it thinking or hammering, and this fusion is constantly on the move. The intertwinement and mingling between world, sense, body and I, occurs in activity. Sensing is the action of wandering, going somewhere, being directed at something. Sensing is visiting and moving on (Serres 1985/2008: 304 ff.). Visiting is being on the move, in continuous propagation, incessant dispersion and excursion, coming and going. These comings and goings may be broken down analytically into action-coherencies, divided out on hybrid beings, but these are fixations which attempt to perform stability where there is

actually movement, continuous excursion; they are attempts at finding comfort by standing on sharp rocks with bare, soft feet instead of plunging in and swimming. With Serres, the body is on the move, the senses are on the move, the mind is on the move, and *this* is the foundation, which no longer is a foundation, but a sea.

About lists

In "Complexities" Mol and Law tackle the relationship between singular orders and representation, and argue that singular orders come with an illusion; they enact a reality where all relations can be specified, and where all-inclusive overviews may be made (2002: 14). An example of a mode of representation which according to Mol and Law enacts this illusion is the classificatory system: "which makes cages, big cages that are then subdivided into smaller ones, like the system that covers the animal kingdom: individuals go into species, species into families…" etc. (Mol & Law 2002: 14). Mol and Law further note that this system "is materialized in classical museums: in this wing of the building you find the mammals, and the reptiles are over there. Rodents come with rodents. Walk around the corner, and you find the apes." Mol & Law 2002: 14).

Such classificatory systems presuppose a single world where an all-inclusive overview is possible, and where all entities may be grouped in all-encompassing and mutually exclusive categories. Mol and Law argue for representations which try to enact in more complex ways, and use the list as an example of a way of representing which does not necessarily enact a singular order, an order which expels overlap, interference and complexity. Lists do not claim to catch everything. They gather elements, but do not claim that they fit into one overarching scheme. Elements on a list may hang together loosely, they may overlap, contradict each other or simply go off in various directions. A list may be a way of representing which does not presuppose a single world; a list may be a way of representing which enacts multiplicity.

Theoretical Buoys
A list of floating concepts

A list of floating concepts is made with the purpose of highlighting terms and ideas which will be used in the analysis of how portable objects, visitors and exhibition associate. The list is a gathering of concepts which it may be useful to grab hold of. The list is also a distortion of the theoretical vocabulary which has been lined up until now. It translates it to the inquiry of how portable objects, visitors and the exhibition associate. This distortion has already snuck itself into the latter part of the theoretical chapter, where Latour and Mol and Law are combined in the concept of shifting, and this distortion is continued here. The main part of the following list is a summing up of the presented conceptualizations, but the odd invention also sneaks in, most notably in the form of the term mode of visiting.

Action: a central idea pointed to by Latour is to look at action, inquire into action as a surprise, an event and try to describe how action emerges as an effect of associations of heterogeneous elements, semiotic and material, human and nonhuman. The purpose of analysis is to trace how action emerges. There is a risk that action may be confused with behavior. Given the critique of behaviorism as leading to reductionist, mechanical understandings of human beings (Hayes 1994: 7), it is central for me to point to a difference between action and behavior: Czarniawska argues that action may be distinguished from behavior by action's inherent intentionality. Intention, purpose and reason are what distinguish action from behavior (Czarniawska 2004: 3). Descriptions which deal with intention, purpose and reason are not behaviorist descriptions, they are descriptions of action. Czarniawska also points out that intentionality need not be viewed as an exclusively human matter (2004: 81). Things may hold intentions (Latour 1993b: 13).

Association: in empirical interactions an association is a link or relation between entities which emerges in action. Analytically the concept of association relates to the terms mediation, translation, invention, drift, displacement, and transformation. The term association plays a central role in Latour's version of actor network theory (Latour 2005). An alternative to the term association is Law's term gathering (2004).

Action-associations: Action emerges in associations, the concept of an action-association is like an actor-network, but multiplied. An action-association may both have the form of a network or an action-flow, or action-flicker (inspired by Mol and Law's fluid and fire spatialities). It is an association of heterogeneous elements in action. It may both include subjects and objects, and may include more than one subject. Inspired by Michael the defining notion may be termed as co-agency: that the entities act together. A human being may participate in multiple action-associations, some more labile and slippery than others. The durability of an action-association is defined by a complex set of sociomaterial forces. Another word for an action-association is an action gathering.

Action net: an alternative to the term action-association. It is a term which is invented by Czarniawska and which Latour equates to a work-net. It describes the effort that is put into laying out a network (Czarniawska 2004b: 780, Latour 2005: 132). The term is devised for organization studies, but is also an "empty concept" which may assist in studying "what is being done" and how these doings relate to other things being done in the same context (Czarniawska 2004b: 784).

Cyborg: a famous hybrid figure, invented by Donna Haraway (1991). The cyborg embodies associations between human and nonhuman elements. The cyborg is a hybrid, a creature which inhabits multiple non-congruent worlds. The word cyborg may also be used as an adjective: "a cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of partial identities and contradictory standpoints." (Haraway 1991 p.154)

Co(a)gent: a term proposed by Michael (2002) inspired by Haraway's cyborg. The term describes a heterogeneous and distributed actor, synonymous with hybrid and cyborg. A difference in nuance between co(a)gent and action-association is that the first term may have a tendency to fixate an entity. It creates a new unitary figure, and with this runs the risk of moving the focus from relations and continuous becoming to the coherency of a hybrid.

Hybrid: mixture. The word hybrid may both be used as an adjective and a noun. Used as an adjective it means mixed. Used as a noun the term labels a heterogeneous actor and is synonymous with co(a)gent and cyborg. A hybrid may emerge as an action-association.

Mediation: the proces of association or linking of entities. The word particularly draws attention to simultaneous processes of linking and transformation. Mediation is not a simple transportation of meaning through a mute and passive intermediary. Meaning is in part constituted by the mediator (Latour 1991: 5).

Mediator and intermediary: two analytical concepts which can be used to either highlight or tone down the distortion which occurs when entities are associated. If an entity is treated as a mediator the focus is on what the mediator does, how it translates, transforms, modifies and alters the meaning or action which it mediates. The mediator changes what it mediates. Looking at objects as mediators implies considering what it is that they do, how they make relations, form them, shape them. If an entity is treated as an intermediary the agency of the intermediary is toned down, the intermediary is seen as loyally carrying out actions or transporting meaning. Following Serres mediators and intermediaries may be explored as messengers and with various metaphors among others that of angels.

Enactment: A term which is frequently used by Law. An enactment is an order, a continuously emerging pattern which emerges out of processes of heterogeneous ordering and reordering, and which is used synonymously with the term performance (Law 2004: 159) and with practice (Law 2004: 56).

Multiplicity: a central point made by Law and Mol is that order is not singular, there are always multiple orders. Multiplicity rests between singularity and complexity. Multiplicity is related to process, to the idea that enactment, practice, space, pattern and other kinds of order are always in a process of becoming, they are emergent and always in tension, as multiplicity. Multiplicity is an ontological premise, and this implies that 'reality' and 'the world' are also multiplied. There are multiple, partially connected 'realities' and 'worlds'. These realities overlap and coexist, they are 'more than one and less than many'. Multiple logics, orders and patterns are at play simultaneously. A place may be conceptualized as consisting of multiple overlapping spatialities, and a person is not a single, coherent entity, but similarly may be enacted in multiple versions (Law 2004: 162).

Coherency: is a central focus for Mol and Law who on the basis of the premise of multiplicity inquire into coherency, how different versions of something relate, and how different enactments overlap and interfere with each other. Coherency

may be contemplated by drawing on notions of stable networked relations, and of fluidity and flicker, but Mol and Law also urge the development of other metaphors (Law & Mol 2001: 616).

Modes of visiting: A concept I propose inspired by Law's concept modes of ordering which are recurring patterns of order which emerge in the relations between human and nonhuman entities (Law 1994: 95), *and* inspired by the central role Serres' gives to visiting as a metaphor for sensing (Serres 1985/2008: 304ff). Modes of visiting are recurring patterns of action which emerge in the associations of visitors and exhibition, they are engagements where the exhibition is mediated in and as a characteristic order. There will be more on mediated modes of visiting in chapter nine.

Shift: Shifts may occur between modes of visiting. This is visible when analytical attention is paid to one human being and the multiple action-associations this human being participates in. When mediation and multiplicity are at play simultaneously, a human subject becomes an intersection between multiple, shifting, mediated enactments. A shift emerges when a human being shifts from one mode of visiting to another. This will be unfolded further in chapter ten which is about shift and intereference.

On writing

A list with a few points of inspiration in relation to writing

- it is alright to experiment with animation of the nonhuman (Latour 1992)
- it is alright to use metaphor (Serres 1993/1995)
- it is alright to write dialogues (Serres 1993/1995; Latour 2005)
- it is alright to make manifestos (Haraway 1991)
- it is alright to mix fiction and non-fiction (Serres 1993/1995; Latour 1993, 2005; Haraway 1991)
- it is alright to use personal anecdotes (Serres 1985/2008; Latour 1993; Law 2002; Michael 2000)
- it is alright to write of one self (Latour 1993, 2005; Law 2002, 2004; Michael 2000; Strathern 1991; Serres 1985/2008)

5
Black Squirrel Method

The qualitative, empirical fieldwork and the process of analysis are described as materially mediated processes which contribute to the goal of mounting realistic appearances.

In this methods section I reverse the direction between theory and practice, and instead of applying theory to practice, apply practice to theory, using taxidermy as a metaphor for describing the employed research methods. A goal is to engage with thinking method in a manner which lets go of a metaphor of perspectives, as suggested by Law & Urry (2004: 6) and by Mol (2002: 11f.), and instead engage with a language of crafting and reality-making. The process of research is explored through the metaphors of hunting, skinning and mounting with the purpose of building an account of research as a materially mediated craft of mounting realistic appearances.

Hunt

Taxidermy is related to hunting. Animals are hunted in order to be exhibited in museums; hunting expeditions seek out prime specimen and kill them in order to show them to the public. Outside of museums, taxidermy is also intertwined with hunting; hunters who want to boast their trophies have them crafted into taxidermy mounts.

We all know what a hunt is: it is a pursuit of live animals, either carried out for leisure or professional purposes. During a hunt, an elusive target body is followed and hunted down with weapons. The body is then taken home, and perhaps transformed into a mounted trophy. Although of a somewhat different sort, research also involves a process of hunting down bodies, catching them and taking them home. In fieldwork the researcher pursues live interactions. In order to obtain bodies of material, the researcher uses various weapons: cameras, audio recording equipment, pens and notebooks. These tools are used to obtain recordings of situations as they occur. Various bodies of interaction are

pursued. While obtaining the desired bodies the researcher fixates them into a form which makes it possible to transport them, so the researcher can take them home and work on them.

Ethnographic fieldwork

The thesis builds on ethnographic fieldwork at Naturama. Ethnographic fieldwork can generate an in-depth qualitative understanding of a site and of user practices, and is useful for exploratory and descriptive inquiries (Andersen 1990: 150; Van Maanen 1982: 103; Schrøder et al. 2003). It is a basic conviction of ethnographic inquiry that this kind of description may yield relevant knowledge about aspects of everyday life. The purpose of ethnographic fieldwork is to build an understanding of what users do in actions and interactions, and this sensitivity can generate knowledge about the patterns and practices which are anchored at a site, and furthermore may be an important inspiration for organizations who want to move closer to what their users do.

For this thesis data have been collected throughout the course of fourteen months, from February 2007 to April 2008, during 39 days of observation at the museum. Qualitative data are created in various forms: digitally recorded qualitative interviews, observations, some recorded by a digital voice recorder, others handwritten, and a special kind of video-participant observation which has been developed for researching visitor experiences in exhibition spaces (Gjedde & Ingemann 2008). The research makes use of written materials from the museum, and is furthermore informed by interviews with external parties and participant observation in outside of the museum situations, such as the 2007 annual museum meeting arranged by The Heritage Agency of Denmark under the Danish Ministry of Culture.

Observation recordings have been collected with visitors ranging from two years old to after retirement, but as the fieldwork proceeded, a focus on children aged 4-13 emerged. The ages of the people involved in the slices of data which are used in the analyses of the three portable objects are with children ages 4-13, and fellow visitors ranging from the age of parent to grandparent. As mentioned in the review of museum literature in chapter 3, a museum visit is a social experience and often occurs in a cross-generational unit called a family. This affects data; a video-observation for example, although one person wears the glasses is about fellow visitors, as well as about the wearer. The main body of recordings which the written account draws on and refers to is a number of situations where children and fellow visitors interact with portable objects.

	Pamphlets	Mobile cameras	Animal costumes	Interferences
Observation	5 situations	5 situations	5 situations	3 situations
Interview	7 interviews	9 interviews	3 interviews	

Figure 4. Data. *Overview of data for each portable object.*

Such interactions very seldom involve only one visitor with an object. For this reason, the 'observed unit' is not easily grouped in numbers. The conventional desk-interview is a lengthy interview with one person. It counts as one. But in the exhibition fieldwork units are much messier. They overlap. How many units does a family count for, and what about a school group? Or an interview with two children, is that one interview or two? The most sensible way I have found to account for this data is in terms of situations. In the analyses in chapters six to ten, I have drawn on data from five pamphlet situations, five mobile camera situations, five animal costume situations, and 19 visitor interview situations. Additionally, the data which were presented in chapter two in the introduction to Naturama are from three additional observation sessions.

Visitor interviews are short, they have a duration of 5-10 minutes. Observation data range from a duration of 10 seconds to 90 minutes. The video and audio observations which I have grouped as five pamphlet situations count the interactions of 20 people on leisure visits, and the seven pamphlet interviews are with 21 people also on leisure visits. Two of the mobile phone observation situations involve school classes, so each of these situations involves somewhere between 20 and 30 people. The remaining three mobile camera observation sessions involve three families of six, five, and five people on a leisure visit. The nine mobile camera interviews are with 21 people, primarily on educational visits. The five animal costume observations include three observations of groups on educational visits, and two observations of families, counting a total of 9 people. The three animal costume interviews are with four people on educational visits.

Interviews and observation data have been collected during 21 days of fieldwork which focused on exhibition interactions. The collected data cover both leisure visits and school trips. The selection of who to observe and interview emerged as a combination of my focus on interactions with portable objects and chance. I approached visitors without having made prior arrangements. Before interviewing children who participated on a school trip, I asked permission from their teachers, and for family visits I made contact with parents before asking children questions - with some exceptions for older children who were walking

around on their own. There were two exceptions to this form of selection and contact: both exceptions were for visitors wearing the video observation glasses, where I asked people I knew if they would visit the museum wearing the glasses.

Although it is not mentioned in the above schedule, nine interviews with museum professionals and 18 days of participant observation which focused on what was going on 'behind the scenes' of the museum have also informed the inquiry. Interviews with museum professionals have a duration of between 60 and 90 minutes. A chronology of the field work is provided as appendix.

Focus and analysis: A call for papers leads the way

During fieldwork my theoretical position generated an attention towards how material objects in various ways stabilize social order, and an attention to the important and often unseen roles which intermediaries may play: hangers which join posters to walls, revolving doors as points of exchange between inside and outside, staples inside of pamphlets, etc. On a specific occasion these theoretically generated sensibilities were channeled into attention towards a certain kind of interaction between visitors and the exhibition. This focus emerged because of an 'external' object: a call for papers. The call gave doctoral students the possibility of participating on a two-day workshop on Interaction Design in Pedagogical Practice, and furthermore held the promise that a selection of these papers would be published in a special issue of Nordic Journal of Digital Literacy. The workshop was organised by the School of Communication, Technology & Design at Södertörn University College in collaboration with the Network for IT-Research and Competence in Education (ITU), Oslo University, and scholars from these institutions were guest editors of the special issue, which was published in 2008.

I came across the call for papers while I was doing fieldwork at Naturama. I had made contact with Naturama at an early stage of my PhD work, asking if they would be a case in my thesis. I chose to make contact with Naturama because it is an experience site, I like the museum, and it is conveniently close to my home. Naturama was one out of four places, which I contacted, and it was the only site with which an extensive collaboration was established. My initial letter to the museum briefly sketched out three fix-points for my work: materiality, relationality and aesthetics, and mentioned my interest in the mediating role of material objects. After an inspiring first meeting with the museum manager and a senior researcher, agreement was made that I conduct fieldwork at the museum. A desk was put to my disposal in the museum's main offices, I received flowers on my first day, and I was entangled. I spent the most of four months studying work

practices at the museum, participating in meetings, doing interviews, following people around, and following a temporary exhibition in the making. I was frequently invited to participate in managerial and organizational discussions, and as a contribution to the museum, I carried out a half-day strategy seminar where all of the museum staff participated, and which was rounded off with a nice dinner. These months behind the scenes at the museum had given me a good feel for how staff enacts the museum in various ways, and now I wanted to build a comprehensive understanding of what visitors do in the exhibition. I moved out of the offices and into the exhibition.

I hung around in the exhibition, followed guides, observed visitors, and participated in activities. I did not really know what I was looking for. I was interested in materiality; how material objects participate in social action, but also in visitor experiences and in the communication relationship between the museum and visitors. And then the call to look at *pedagogy and digital media* turned up. Digital media were present at the museum, and so was pedagogy, so why not? Digital Nature Bases can be found at various locations in the permanent exhibition, and I had given substantial thought to these Nature Bases and the museum's information architecture. I had brought my three year old son along with me to the museum on a couple of occasions, and during these visits I had found it annoying that information about an animal was separated from the exhibited animal. This made it impossible for me to tell him about the animal, except stuff I already knew, which was limited. While my son and I stood in front of each animal, I could not provide information about the animal. So I had the idea that I could write about how digital media used in an exhibition can lead to visitor incompetence: I could not competently tell him about the exhibited animals. With the call in mind I observed visitors at digital Nature Bases, and became aware of how Nature Bases were made relevant by exercise pamphlets, exercise pamphlets referred to Nature Bases for answers, and in this way these two entities perform each other.

In order to get some data on this, I did interviews at the Nature Bases, asked visitors what they thought of them and what they thought of the pamphlets. All pretty straightforward stuff. One morning during this hit and run fieldwork I find myself standing on the entry ramp which overlooks Water and provides a gaze at Land. I stand there looking, gazing, and then I see something which makes a huge difference to my project, something which ends up shaping my inquiry and this thesis. The following text is a transcript of what I speak into the Olympus digital voice recorder in that situation during fall vacation 2007. I am holding

the recorder up in front of my mouth, feeling kind of silly talking to myself, but not really feeling foolish enough not to do it. Imagine an eager, sort of muffled voice, the voice of an observer, but also the voice of someone seeing something she is enthusiastic about.

”Beautiful girl, blond hair, black dress, preteens, walking around with her camera-cell phone, recording, taking pictures she is actively seeking out new animals, taking small animals, big animals, eye of a bear, eye of a little squirrel – otter... and what I am thinking is that this is also a digital artefact, her cell phone and how she is using it as a way of seeing, she is creatively engaged in seeing in specific ways, her cell phone is a part of her way of seeing, and thinking about this in relation to children who buy exercise pamphlets: they are also engaged in a way of seeing, another way of seeing, so it seems that we, visitors, walk around in this space and engage in different ways of seeing and that these different ways of seeing are mediated either by the visitor's own media or on occasion by a medium that visitors are given from the museum, or that they are offered from the museum – that they have actually *purchased* from the museum. And then this young girl was walking around with a camera, and she is here with two adults and some other children I think, because all of a sudden there is this boy, a head and a half younger than she, who is wearing an animal costume, and he comes over to her and he starts scraping at her, you know he uses his paws to sort of scratch her, and to sort of jump up at her, and she is like looking at him and obviously she knows him very well, probably her brother, and he keeps on pawing at her and she doesn't really say anything to him, she doesn't ask him to leave or anything, but they have this little interaction and then they proceed to their own... activity, their own way of doing and seeing this space.”

This transcript of my observations witnesses me in a specific mode of looking. I was looking for digital media. The call for papers, the digital voice recorder and I conjointly performed the exhibition interactions in a specific way. The somewhat broad category ‘digital media’ made me *see* mobile phones. It may seem self-evident when I tell it now, but all of a sudden mobile phones entered into my world. I had been looking at the strings, the relations between the digital Nature Base and exercise pamphlets, and then click – when I saw the girl look at the exhibition through the optic of her mobile phone, I would almost say that I got a revelation, all of a sudden I realized: one, that this was also a digital media, and two, and most importantly: I saw these *distinct optics*, I saw visitors being engaged in different ways of seeing, and portable objects *co-producing* some of these ways of seeing. The mobile phone made the seeing which visitors carry out,

visible to me. Seeing the mobile phone as an optic tugged along with seeing the exercise pamphlet as an optic. Luckily enough, in the same situation the boy in the animal costume comes along and disturbs the notion of optics and points to the *body* and to modes of *action* instead of just optics. The frictional, full blown body contact of the brother animal interferes with and disturbs the understanding that what visitors do is primarily a question of vision. What visitors do is embodied, enacted.

The focus that I have on the three types of objects was developed because I was doing observations and simultaneously thinking of the call for papers. The call fixated my observation. From that moment things became much clearer for me. I had an empirical handle, something to unfold and understand. And I had a future object to project my understanding into; the future represented by the workshop and the article which I was going to submit – and which ended up being accepted (Svabo 2008b). The call for papers mediated my field work, and ultimately mediated my attempts at doing knowing. (Of course the call for papers worked relationally. A whole net of associations can be traced: the e-mail which carried the call to me, the editors, the journal, my imaginary paper, etc. And a net of associations can also be traced into the museum: the cooperation from the museum, the presence of visitors, the mobile phone, my digital recorder, the museum exhibition, the animal the girl stood in front of, the ramp which was designed to give a view to the exhibition from the exact point where I was positioned, etc.).

Follow the actors

A slogan in ANT methodology is the term 'follow the actors' (Latour 2005: 12). This slogan is applied in this study as a following of portable objects.[1] This has implications for which visitor group is studied. Having an interest in portable objects, I became oriented towards the users who engage with these in the museum space. The users who primarily do so are children and pre-teenagers. It is much more common to see children with mobile phones than it is to see adult visitors with cameras, I would almost say that it is seldom to see children without mobile phones. When adults do photography, which they do, they tend to use

1 Of course there is a limit to just how faithfully the actors are followed. There is always partiality. I don't follow the hybridized beings home. I don't follow them to the rest-room. I don't even follow them to the cafeteria. I follow them in the exhibition. And I don't even do that very faithfully. I am distracted, other hybrids catch my attention, I find myself recording them. Shifts, fluxes and flows are also at play in the researcher's enactments. There is faithful following, but there is also betrayal.

regular cameras, and not their mobile phones. Likewise, adults are involved in exercise pamphlets, but they are usually not the carriers, and adults are involved in animal costumes, they help children get dressed, and they may instruct children to pose for photography wearing costumes, but they don't wear them. It was not my initial plan to focus on children. This focus emerged as a result of following portable objects.

Spatial challenge to data production

The 'revelation' brought with it the need for new research technologies. I wanted to get closer to the kind of interaction which I had seen the girl and her brother in. Researching an exhibition and how users interact with it poses a challenge to the two most common methods for producing qualitative data: the *interview* and *observation*. When I first started observing in the exhibition, I had a notebook with me. I soon discovered though that the notebook lead to a stationary point of view in the data I could produce. This is good for researching one specific area of an exhibition, for example how visitors interact with a specific exhibit or media. But if the researcher wants to see what people do while they move – how they move through the exhibition and the diversity of exhibits, media and other visitors which they interact with - the researcher has to be mobile. It is difficult to simultaneously take written notes and follow people on the move. So, instead of handwriting notes, I recorded them in audio. I moved around in the exhibition, speaking into the voice recorder. This had an effect on my observation notes, which can be seen in the earlier transcript. My observations are a mixture of *description* and *reflection*. It was not possible for me to have a piece of paper in front of me, with two columns where I on one side could write realist descriptions of what took place and in the other column write my own reflections on what was occurring, as is suggested by some method sources. My observations became a more messy mix of realist descriptions and theoretically inspired reflections, and this generated data which were not really great as the foundation for descriptions of visitor interactions with each other and the exhibition. The site and interaction is very much about visual data, and the audio recorder for obvious reasons does not catch this, and using my voice to describe all of this data at the necessary pace is not possible.

In relation to interviews another challenge in data production arose out of the strong material and spatial character of my topic of interest. In interviews, when the focus of a conversation is an exhibition, the conversation is severely amputated if it doesn't take place in the exhibition. It is beneficial to have the

exhibition as a visible common point of reference, for example in order to point out things. The interviews have to take place in the exhibition. So pulling visitors out of the exhibition and asking for longer, more formal interviews was not an option. I needed to talk to them on-site. The first visitor interviews I carried out in the exhibition were anchored at the Nature Bases, where the people I interviewed already were located. I approached them and if permission was granted to interview them, I attached myself and my audio recorder to the already established assemblage of person and Nature Base. The digital voice recorder was fine when my data-collection focused on the stationary Nature Bases and interviews, but as mentioned when the need arose to produce observation data with people one the move, in action, the digital voice recorder was not as useful. Inquiries which focus on portable objects and people on the move demand mobile methods (Czarniawska 2007; Büscher & Urry 2009), and inquiries which furthermore address issues of spatiality and the landscape which people and objects move in and through, demand techniques or technologies which build data that are rich on visual content.

Hybridized data collection

A piece of technology which deals with the challenge of producing visually rich, descriptive data of people on the move is a piece of spy-ware, a pair of video camera glasses, which Ingemann describes for use in research in an exhibition context (Gjedde & Ingemann 2008).

The glasses have a built in camera lens at the centre, as a 'third eye', and the pair I used had a separate audio recorder. Both of these devices are connected to a recorder which the wearer carries in a back-pack. The camera registers what the museum visitor looks at, for how long they look, what is said, when visitors move and to where. The glasses record "the action as it happens" - as an internet-ad for spy-camera glasses points out. In the video material, the realist description does not depend on the observer describing it. It is registered by the camera. This enables a close analysis of subject-object-exhibition and subject-subject-object-exhibition interactions.

Ingemann has used the video glasses to research adult's encounters with museum exhibitions. In Ingemann's studies, the visitor is accompanied by the researcher. The two people walk through the exhibition and talk about it while they see it. Ingemann points out that the video-walk is not an interview, the researcher does not interview the person while they do the exhibition. They experience the exhibition together and verbalize while they do so (Gjedde & Ingemann 2008).

I have used the video glasses a bit differently, in what can be called *hybrid participant observation and interviewing*. I have used the video glasses in several combinations: a pilot where an adult wearer is accompanied by another adult (none of them being me); an adult wearer accompanied by a child; a child wearer accompanied by siblings and parents; and me as a wearer. When I have worn the glasses I have used them to generate two types of recording. One, I have used them to record 'standing interviews', where the function of the video glasses is similar to that of a digital voice recorder, but with the additional visual material, which clarifies what part of the exhibition the audio is referring to, and two, in situations where the video-glasses register observations in real time. These observations may or may not be commented while being recorded.

Compatibility between glasses and portable objects

It turned out that video glasses worn by visitors are particularly suitable for research into exercise pamphlets. They are not in the same way compatible with visitor's use of mobile phone cameras or animal costumes. In these cases the researcher has to wear the glasses and do observation recordings in this way. In particular, children wearing animal costumes posed a challenge to data production. I would have loved to get a recording generated by a child wearing video-glasses *and* an animal costume, however such an overlap did not seem feasible. The video equipment would make it very difficult, if not impossible for the child to put on an animal costume. One of the children who did the museum wearing video-glasses, participated in an activity where children were dressed in laboratory shrubs. Getting dressed in a shrub while wearing the video equipment was quite a challenge for her, and animal costumes are far more difficult to get into than a shrub is. Of course there is the option of asking a visitor who is already dressed as an animal to wear the video glasses, but I felt that these two outfits were too much in conflict with each other. Instead I created recordings of children with costumes by wearing the glasses myself.

During my fieldwork something called The Bear Cave was added to the exhibition. This made my collection of recordings with animal costumes easier. The Bear Cave had the effect which was desired by museum staff –children concentrated their play activities to this specific area of the museum. This also meant that it was easier for me to catch their action. I clearly remember a situation before the Bear Cave, where I stand in the exhibition, and a boy wearing a fox head rapidly runs past me, the rest of the costume dangling behind him. I looked at him, wanted to run after him, but couldn't. First of all adults don't do

that. And second of all, how would he not react? I could have interviewed him later, but I lost sight of him. It is difficult to generate data about this sort of action. Interviewing is a method where we can ask the child to tell what was going on, but this may be difficult to do, and words may give rather flat accounts of play. I tried interviewing the children while they were playing, and did get some useful data. I also asked them to show me how/what they played with costumes, and again did get some useful data. And I used informants. I asked museum staff and the children's adult companions what children do with costumes, and why they like wearing them. Nevertheless, play as interaction with an exhibition poses a (rather specific) methodological challenge. Retrospectively, it would have been interesting to work more with this challenge. When I started doing my research, I did not know that researching site-specific play was going to be an issue. Play turned up as a finding. Had I known from the outset that children were going to be a central focus, I would have thought more about this in terms of research methods, although my evaluation is that the used methods worked well also with children.

Significant numbers

The three portable objects were selected because they were apparent. They appeared as being significant in visitor interactions. The understanding I want to build of these interactions is qualitative. I am not out to say anything about how many interact with objects 1, 2 or 3, but as a background information for why I spend so much time and energy on these objects, I can say that doing the museum with these objects is not rare. They are central ways of encountering the exhibition. Furthermore, the focus on children and pre-teenagers can be given context by the fact that at the time of my fieldwork under-eighteens accounted for 58 % of the visits to Naturama.

I realize that in qualitative research focusing on what many do is not necessarily interesting, nor does it give scientific legitimacy, but from a practical perspective it does add value. From a practical perspective (where practical is understood as endeavours to design, manage and communicate experience sites), it does increase the value of the work that it focuses on activities which many visitors engage in. When a large group of visitors encounter the exhibition in a specific way, it is relevant to try to understand what goes on in these interactions. This does not imply that interesting and relevant work could not have been done by focusing on the less common. As mentioned in the introduction an interesting study at Naturama could have been of the less used PDAs and audio-guides.

Critique

My fieldwork may be criticized for attempting to capture 'everything' that goes on in the exhibition using a range of media: film, photo, audio and notebooks. This may be criticized for being a way of performing fieldwork which works within a logic of positivism, implicity building on an assumption that I can fully gather information concerning the researched site. In relation to the use of video Crang (1997) mentions this, saying that video can take on the form of a surveillant academic gaze which hovers in the background as some kind of "panoptic apparatus, recording, surveying and disciplining bodies", Crang remarks that film may contribute to ideas of detached knowledge where an invisible and disembodied academia produces pictures of informants, because film may appear to be an infallible field notebook. This can have the side effect, says Crang, that anything which is not recorded, or anything which is not measurable, is downgraded (Crang 1997:368).

My pragmatic response to this is that empirical materials gathered on video are good sources for writing. They provide information which is useful for crafting credible empirical accounts. It is possible to separate the use of video from an implicit assumption that everything is being gathered and instead relate to the use of video as a way of recording materials which make it possible to create partial *and* full-fat fluid realities.

Another reflection which seems relevant in relation to the use of video is that from an ANT position the use of videoglasses may be understood in terms of hybridity and delegation. The researcher will and intention is delegated to research technologies. The program of action is to generate good data, and this program may be translated into various technologies, and to assemblages of technologies. A central task of gathering empirical material is delegated to the videoglasses, which hold some qualities which the researcher does not: they have a detached, coherent and realistic visual memory which is useful to write from. They have other problematic aspects though, they may run out of battery, muffle sound, or loose the picture, just to mention a few of the occurrences which my hybridized data collection met.

Interference

Mol points out that a relevant issue to consider in fieldwork is how method interferes with the object of inquiry (2002: 155). Using video does have the effect Crang mentions, the visual is given priority in described interactions and thus also analytically. This is not necessarily a disadvantage when the studied site is a

visually rich environment, but it could be an experimental challenge to research the same site relying on the other senses; what could a focus on smell reveal, for example? Or, with reference to Hetherington (2003), what kind of a landscape is Naturama in terms of touch?

A related issue of interference can be contemplated in terms of how visitors felt about wearing the glasses and more generally how my presence at the museum interfered with the object of inquiry. Research as such is interference. For the visitors who were involved in my data recordings, it for some was a quite brief encounter, a short conversation and then they proceeded with their visit. For others, a more significant mark was made on their visit. As regards the glasses, the two adults who wore them asked, at the beginning of the visit, whether or not they looked strange for example, but did not mention them later. The children did not mention them. Visitors wearing glasses were pulled into 'normal' museum interactions by family members.

When I wore the glasses, talked to the voice recorder or sat and took notes, I did not, in my judgment, really catch that much attention from visitors. They may have thought that I was kind of strange, but at the museum people pretty much seem to be doing their own thing, and don't devote much attention to a slightly weird woman who sits on a chair writing, walks around talking to a machine, or wears odd glasses. The museum is a public space and diverse hybrid doings are legitimate.

Practice on the move

A reverse question of interference may be contemplated, and this is the issue of how practice continuously interferes with research. Doing ethnographic fieldwork is like trying to skin and mount a live animal. Practice is in a continuous flux, it is always on the move. I try to make textual order out of a site, but before I even get so far as to stabilize the text, the object moves, the practice moves. I arrive at certain moments of thinking that now I understand, then exercise pamphlets are moved. They put wheels under exhibition podiums. Add a Bear Cave. Stop using exercise pamphlets. Start using pamphlets again. A person comes back from leave, another one leaves. Fixating an object of inquiry and fixating a text is always late. Practice is on the move, refiguring and reconfiguring itself and its relations. When I think I have found something interesting to say about practice, practice has become something else. This shows, perhaps, that if a research goal is to move practice, attempts at doing knowing must be carried out – in practice.

A considerable part of my fieldwork has consisted of moving along with the

The animal which is being skinned is a Black Squirrel. The taxidermist releases the skin from the body by meticulously slicing and skinning. The skin is carefully unfastened taking care not to damage the skin. Special attention must be taken when skinning over joints, as there is little tissue covering bones, and it therefore is easy to cut through the skin in these areas. When the specimen is skinned, the body is discarded and the skin is mounted on a manikin. The goal of the taxidermist is to create a mount which makes a convincing presentation

field. At the outset I had a very loose definition of what I wanted to do. This has disadvantages because the research design is not strategically thought out in advance, cases are not sampled in clever ways in order to show specific aspects of the topic of inquiry. Instead, the research becomes a movement into the field, and the research inquiry is generated in the field. I have been closely engaged with the field. I did not know what this field was going to offer, therefore I could not know in advance what the ideal design would be. My research inquiry has been shaped by the field. My reality has shifted with the field.

Looking back, things are crystallized, they are written into form, and an ideal research design may present itself retrospectively. One thing that I for example would work into a strategically devised research design is that I would attempt to gather the materials which are generated in the mediated enactments – the completed exercise pamphlets and the pictures which have been taken. Given the interest in material objects of this thesis, it would have been interesting to look at the output of these productions; to look closely at the completed exercise pamphlets, the pictures, and the play which hybridised users produce. Instead of doing this, I focused on associations and actions, on the *production*, in the moment, when it occurs, rather than on the *product* as an end-result, a finished object. I have later tried to make contact with informants in order to ask them if they would share their photos with me, but have not been successful in this.

Skin and slice

The taxidermist skins the animal. The skin, the part of the animal which is visible from the outside, is detached from the fleshy part of the body. It is far the easiest to skin a fresh specimen. Skinning is done by making an incision, and then slicing with short cutting motions taking great care not to damage the skin, pulling and stripping. Special attention should be taken when skinning over joints, as there is little tissue covering bones, and it therefore is easy to cut through the skin in these areas.

The researcher pulls pieces of the obtained body of reality apart. Using conceptual tools the researcher meticulously slices out pieces of interaction, unfastening each from a larger context and transforming them into entities which may be handled with a computer, pen and paper. Slices of reality are unfastened one at a time. This process of slicing and unfastening relates to the etymological traces of the word analysis, from Greek *analyein*, which means to 'unloose, release, set free'.

Theoretical guidance

Analytically the research primarily draws on actor-network theory. The existing body of ANT and post ANT literature has been the theoretical foundation for the inquiry and as such has shaped the study and its focus on the mediating role of materiality, heterogeneous relations and multiplicity. These themes have been guiding fix-points during fieldwork, in the slicing out of data and in writing. Previous research on museums has contributed an understanding of museum practices and experiences, and has pointed to the relevance of a focus on the relations between portable objects, visitors and the exhibition. Earlier research in related study areas such as leisure and tourism have been inspiring examples of studies which explore the role of mediating materialities and heterogeneous configurations in everyday, leisure and tourism practices (Haldrup & Larsen 2006; Michael 2000).

Going from raw data recordings to written text is a complex process, and it is impossible to account for all aspects of it, but a few central cuts can be pointed out. Generally the process can be summed up as a slicing out data defined by a set of theoretical sensibilities, a re-working of these theoretical sensibilities, and last a written mount of the theoretically informed data analyses.

Organizing data

The field recordings were a large body of material, and the recordings which were obtained by me wearing the videoglasses or speaking into the audio recorder were a disorderly mess of observations and interviews with various people in various situations. In observation sessions, I focused on several people at a time, consequently a one hour observation may hold various slices of data about the same visitor at the beginning, middle and end of a visit. The video observations where visitors wear the glasses are more orderly, because there was a consistent perspective, that of the wearer, and the logic of the data was thus the course of each visit. When I started pulling apart the materials, the first thing I did was to organize all the data according to this same kind of logic, where recordings concerning one visiting situation are grouped together. It turned out to be useful to focus on a limited number of visits, and to cut out these data from the larger body of data in order to build coherent text flows of visits. In this way data is rearranged to portray the actions of one child with fellow visitors at a time. The selection of which visits to focus on was primarily defined by the quality and length of the interactions, I wanted comprehensive data sets which would show various types of interaction during the same visit and over longer spans of time.

Visitor-coherent data were then grouped according to four themes: one for each of the three portable objects and one for shifting, overlap and interference. In all of these themes data have furthermore been labelled 'leisure' or 'institutional'.

Slicing out data

The employed theoretical position points to some aspects to be aware of, particularly associations and action, so these were primary points of focus: how do visitors and portable objects meet, how do they engage in action, and how is their relation broken again. A first analytical move consisted of cross reading the organized data for questions about how relations are made between visitors, portable objects and the exhibition, and how relations are broken, and furthermore, characterizing their association, and making initial descriptions of what is produced in the enactments and what the exhibition is performed as. These readings were written into very early versions of the accounts of each of the three portable objects, which developed into chapters six, seven and eight. Additionally, these readings of the data were gathered in a table, elements of which are presented in chapter nine, where the three enactments are juxtaposed. The idea of juxtaposing the three enactments was inspired by Law's text "Pinboards and Books: Learning, Materiality and Juxtaposition" (2007), where Law accounts for how multiple realities may be juxtaposed. The goal of symbolically hanging three postcards next to each other on a pinboard guided part of the narrative intent in chapter nine. The imaginary postcards are each of the three mediated enactments.

Having covered the question of the making and breaking of associations, a second reading focused on the content of each enactment in terms of spatiality, temporality and visitor position. The written reflections which this reading generated were built into the early versions of the three first analytical chapters.

The analytical focus on the making and breaking of associations made me notice the interactions between different mediated enactments, for example where one object disturbs another. This was the focus of a third reading, and it became a central inquiry to find out how this could be understood. In my initial interpretation, visitor awareness played a central role, but how could I contemplate this from an ANT position? This lead me back to theory, to Michael's analyses of the interaction between various co-agencies, and ultimately to Serres' philosophy of mingled bodies.

After these initial readings, where central data were sliced out and translated into analytical texts, started a process of mounting accounts.

Mount

Taxidermy is about stillness, stabilization, fixation. It is about crafting a body into a realistically appearing still form - a mount. The taxidermist pulls apart the body of the animal, shreds, fleshes, cleans and mounts it. It is a strange process of taking everything out of the body, and filling it up with fleshless substitutes. The flesh and body, the guts, liver, heart, intestines, muscle and tissue are removed, blood and other fluids are soaked up, and instead the skin is filled with materials which take on a natural form without having qualities of decomposition after death. It is a craft of gathering heterogeneous materials into a convincing presentation, attempting to make it look as realistic as possible. It is common to use prefabricated polycarbonate manikins, which come in different sizes, postures and styles. Creating nature is a craft of manipulating skin onto plastic, and sometimes even making it look more 'natural' than in nature, for example when a standing pose is chosen for a polar bear although it is not at all common to see polar bears stand on their two hind legs in nature, or when a birds feathers are meticulously ordered to present themselves in a beautifully arranged manner, whereas while alive they are never so groomed.

Parallels may be made to research. Writing research is also about stabilization, stillness and fixation. It is about crafting a turmoil of overlapping realities into comprehensive and realistic accounts, about mounting reality. The researcher fleshes the site, shreds up interactions, cleans up the body of material, pulls apart pieces of interaction and stuffs them up analytically in order to mount a coherent piece, a piece whose quality is judged by how convincing it appears. Research is a craft which involves assembling heterogeneous materials, and which aims for a presentation which looks realistic. The purpose of writing is to make something real for the reader, about crafting convincing pieces. Both in taxidermy and in research appearances are crafted, fabricated, produced. This does not mean that they are not real, but it means exactly this – that producing something real involves considerable portions of work in the form of hunting, skinning and mounting.

The primary textual mount which is crafted in the thesis seeks to give convincing accounts of the interactions between visitors, portable objects and the exhibition. As in taxidermy, credibility is crucial. It has to seem real, look real. Czarniawska (2004: 118) suggests that skillful representation in a social science monograph is writing which makes the reader feel as if they were there, in the field. One of the ways in which I attempt to achieve realness and credibility is by providing detailed descriptions of characters and setting and by using lengthy

empirical passages. The narrative voice which is used in the ethnographic body of text may be likened to the voice of a guide pointing out things at a museum. The guide-narrator highlights interactions which contribute to building a deep understanding of how multiple associations emerge in the museum, and gives voice to an account which tells the story of hybrid associations. Of course other accounts could be made, but that does not change the value or credibility of this account.

Czarniawska is a central source of inspiration for a literary approach to social science writing, highlighting that academic writing in many ways is similar to literary writing. It is narrative production which makes use of plot, setting and voice with the goal of creating insightful and interesting accounts (2004: 132). Czarniwaska calls the goal of making the reader feel as if they were there 'a commonsense academic criterion' for what representation should do, and supplements it with another quality criterion; what Czarniwaska calls 'interesting recontextualization'. Social science studies should say something interesting about that which they study (!), if they do this, they have done the job, reasons Czarniawska - although not using those words (ibid: 135). Czarniawska does use these words, however: "… the bulk of social science needs to be skillfully crafted. And the questions – from inside and outside – such as: 'Is it valid?' 'Is it reliable?' 'Is it Science?' should be replaced by such questions as: Is it interesting? Is it relevant? Is it beautiful?" (ibid: 136).

These are central criteria of judgment, not only for the ethnographic accounts, but for the entire thesis.

Hybrid texts

The main body of text is accompanied by another category of textual mounts, called hybrid texts. These are texts which have the goal of highlighting central points of the thesis. One such text takes on the form of a fairy tale, the text "Pacifying Prince Pamphlet", which ends off chapter six. This mount is crafted by organizing data from a specific pamphlet interaction into the structure of Greimas' actantial model. Real quotes and the course of events from a recorded situation are built into the oppositional structure of the actantial model. I chose to do this for several reasons. As mentioned, the actantial model is foundational for actor network theory. Using it is a way of experimenting with writing nonhuman agency, with giving voice to a portable object. As mentioned in chapter four, the actantial model was developed for analyzing fairy tales, but it is also useful the other way around, to structure tales with. I have good data on exercise pamphlets, and

couldn't put it all to use in the main text, which would then become too long and tedious. Building some of this data into the actantial model was an experiment, a way of writing pamphlet agency. This engagement with the actantial model echoes Latour's use of it. As Czarniawska points out, Latour uses the model to structure his tale with, because it allows him to say something about his topic (Czarniawska 2004:82).

Another hybrid mount of the sliced pieces of reality began with a reading which overlaps the earlier mentioned analytical readings: a hunt for metaphors. I looked at each of the early drafts of the chapters on the portable objects with the purpose of condensing each chapter into a piece of prose poetry. In this reading I focused on metaphors, built fictive characters for each of the mediated enactments, attempted to characterize the setting and how the exhibited animals are positioned within this mode of visiting.

The first step in doing this was to play around with metaphors on a piece of paper. I did a randomly emerging table, asking questions like: if this portable object was a thing, other than itself, what kind of a thing would it be? *pamphlet:* a pen… traces… paths… a labyrinth / *mobile camera:* an eye / *animal costume:* an animal… fur. What kind of a landscape is the exhibition in this enactment? *pamphlet:* a landscape of trails and traces, of questions and answers; *mobile camera:* a landscape of images, cuteness, beauty; *animal costume:* a natural landscape, hills, mountains, valleys. If this were a literary genre, what would it be? *pamphlet:* crime novel, adventure story; *mobile camera:* photobook, artbook; *animal costume:* magical realist or fantasy novel, drama. If this were a form of action what would it be? *pamphlet:* looking for trails, sitting at a computer; *mobile camera:* gathering things in a basket; *animal costume:* play. This imagery was eventually written into three pieces of prose poetry, which subsequently have been discarded, or - rather: *translated* into the images which introduce the analytical chapters and into the 'letter to a friend' which is a prelude to the conclusion in chapter 11. Furthermore, imagery from them has spilled over into the main body of text.

These are two examples of the processes of working with hybrid textual mounts. These processes have resulted in the preludes, postludes and interludes which are found in the interstices between the main chapters of the thesis, and are related to the use of images in the thesis. The images are used as another narrative layer which mediates and highlights aspects of the thesis, enforcing points which are made textually, but also contributing with its own version of the depicted.

Mixed media taxidermy and hybrid texts

A small subcategory of taxidermy consists of mixing different species in one mount, for example mounting a hare with the antlers of a roe deer. A contemporary twist to this is found in artistic taxidermy mounts, where elements which are not 'natural' are used in the mount, for example combining a blue jay with a glass of medicine, or using semiprecious stones as animal adornment. These mixed media mounts enact hybridity and multiplicity.

Serres, Latour, Law, and Mol criticize Euro-American scientific practice for reducing reality to one. Scientific practice is about authorising *one* chosen narrative and in this process disqualifying alternatives. These authors propose that research depart from this kind of reductionism, and adhere from reducing reality to one. Law suggests that: "There is a need for tools that allow us to enact and depict the shape shifting implied in the interactions and interferences between different realities." (Law 2004: 122).

Writing in multiple and hybrid forms may be such a tool. A hybrid is of mixed composition or origin, it is an offspring which has dissimilar parents, it is impure. A hybrid text is an impure text, a mixed up text, a text which inhabits the land of in-between, not being purely one thing or the other. Examples of texts which may be perceived as hybrid are pieces of literary non-fiction, the personal anecdote and pieces of prose-poetry, in general texts which do not know what they are, texts which hold qualities of being something and something else. I have the term from Hughes, who writes of prose-poetry as a hybrid genre (Hughes 2007), but Michael, who forms his analyses on the basis of personal anecdotes, reasons in a similar manner: the anecdote is both literary, it is a constructed story, and simultaneously exceeds this status because it reports real events (Michael 2000: 14).

The terms *hybrid writing* and *hybrid text* fit very well with ANT and its philosophical foundation. Serres' writing is renowned for its diversity, as mentioned in chapter four. Fable, myth, dialogue, natural science, philosophy, photography and painting appear side by side. Serres' work embodies hybridity. The boundaries between art and science and between fact and fiction are crossed. Etched out hard, crumpled together and stomped on - again and again.

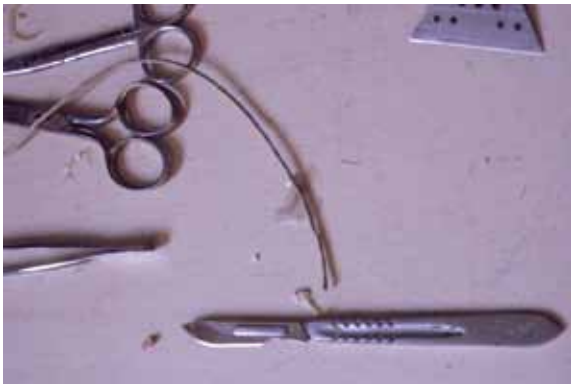
A recently published Danish book on Latour is called 'hybrid thoughts in a hybrid world' (Blok & Jensen 2009). Latour's authorship is full of hybrid writing and genre manipulation, a notable example being "Aramis, or The love of technology", where Latour experiments with genre and narrative voice (Latour 1993/1996). Latour suggests that the style of writing which predominates in academic journals be enriched by other genres and narrative styles: "To the few wooden

tongues developed in academic journals, we should add the many genres and styles of narration invented by novelists, journalists, artists, cartoonists, scientists and philosophers. The reflexive character of our domain will be recognized in the future by the multiplicity of genres, not by the tedious presence of 'reflexive loops'." (Latour quoted in Czarniawska 2004: 135). Czarniawska suggests that '*hybridizing the genre'* is a fitting expression for the endeavour to narratively enrich social science writing (2004: 135).

The hybrid texts which form part of this thesis are texts which employ narrative voices or forms which differ in one way or other from the voice and form which is used in the predominant body of text. A hybrid text is a text of combinations, mixes and mingles. The term hybrid describes a feature of each text, as in the mix between scientific data and a fairy tale. Because the text is a mix, a hybrid, it also enacts multiplicity. Different orders co-exist in the text. These hybrid texts are different from the main text, but they are also different from each other. When several hybrid texts plus the main body of ethnography are gathered, this further enacts hybridity and multiplicity. Multiple textual modes coexist in the thesis. It is an assemblage which both performs singularity, being one, and multiplicity, being many.

The various elements all attempt to contribute to answering the question of how portable objects, visitors and the exhibition associate. And they then, additionally, hope to echo a methodological point which Law makes; that the knowing subject and the object that is known are related in multiple ways – fit and don't fit in numerous ways (Law 2000: 23ff.). The writer and the researched may constitute each other in more than one way. When the writer makes a 'straightforward' academic account of the researched, the writer is performed as a 'straightforward' academic. But as Law points out these two – the writer and the researched, the knowing subject and the object that is known – may order each other in several ways. Multiple subject-object relations are at work, also in research, and are absented or presented textually. There are – potentially – multiple relationalities to write.

Attempting to textually perform multiplicity and hybridity is an attempt at throwing my text together in a way where it *is* what it *communicates*. I include diverse materials in order to create a shimmering account. I seek to perform knowing as a process which may create diverse products, each of them enacting reality. This is fundamentally about applying *mediation as transformation* also in the writing of this research. To communicate is to distort. So I seek to distort in more than one way, seeking out and enacting multiple textual orderings. In-



spired by the before mentioned writers I suggest that a piece of research which is interested in multiplicity should also try to perform multiplicity. Research can use one voice to create an account of multiplicity in a researched site, and that of course is a legitimate way of engaging with multiplicity, but it simultaneously is a paradox, it shows the researched site as richer and more multiple than the world of research. Research which uses multiple forms to create accounts of multiplicity in a site, performs the researched site as multiple *and* the product of research as multiple. Research is enacted as being subjected to the same condition of multiplicity as the rest of the world. The researched site *and* research take on the shape of multiplicity. They take the form of a shimmering body of distinct, overlapping, mediated and sociomaterially embedded modes of knowing.

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6
Exercise pamphlets at the museum

This chapter focuses on the association of exercise pamphlets, visitors and the exhibition. A pamphlet mode of visiting is governed by an urge for completion. Pamphlet visitors move information from deposit to deposit and the exhibition becomes a place to be marked off, finished. Visitors are positioned as somewhat passive receivers of information about biology, but they play active roles in making ends meet and they incessantly negotiate amongst each other along the way.

I am The-Bear-You-May-Touch.

Find me in the exhibition and feel how silky my fur is.

I like to eat both animals and plants.

Find me on the computer and mark what I eat.

Plants. Ants. Dead animals. Deer. Berries. Rocks.

During winter it is difficult for me to find food, so I find a warm cave and sleep.

Can you draw me in my cave?

Go to level Water. Find the seal, what does the seal live off? Find the white-beaked dolphin, what color is the white-beaked dolphin's back and belly? Find the polar bear, do you think the polar bear can use its paws to swim with? Go to Land, find the lynx, find the reindeer, find the bear, go to Air, find the starlings, find the little montre X, find the montre 'E', go to the bird montre with the letter 'A', go to the glassmontre U, find the small montre 'S'.

How many blackbirds can you count in the bird-montre?

Almost one third of the children who visit Naturama do so in the company of an exercise pamphlet. 8,594 pamphlets were in circulation in 2007, which had a total of 29,217 visitors under eighteen. In 2009 the figure was 8,737 pamphlets from a total of 30,595 visitors under eighteen, and because it is common that more than one visitor is engaged with one pamphlet, the actual proportion of

visits which are influenced by a pamphlet is more than one third. By comparison, 147 audio guides were rented in 2007 and 73 in 2009.

Various pamphlets are on display at the museum front desk. Staff suggest that visitors purchase pamphlets, and for school visits this suggestion is already made during prior phone conversations where arrangements are made for the visit. Pamphlets cost 10 kroner (1½ euro) - money which covers the expenses for a prize poster which children are awarded when they hand in their completed exercises. That the museum has chosen to support pamphlets with a prize confirms what staff say in interviews, they find that doing exercise pamphlets is a good way for children to encounter the museum.

Pamphlets are either primarily *picture* or *text* based. Picture based pamphlets are for younger children, and text based ones for older children. In order to solve picture pamphlets visitors have to walk through the three floors of the exhibition and mark off animals which they see. In order to solve text pamphlet exercises visitors have to find information either on exhibition computers or signs, or by going to specific locations in the exhibition; for example to an exhibited animal.

An example of a picture pamphlet is "Easter egg Hunt", a pamphlet which consists of four colour-printed pieces of A4 paper, stapled together and clipped onto a plastic-board. The task is to mark an x by animals which have stolen an Easter egg, so at various locations in the exhibition colored Easter eggs have been placed next to exhibited animals. The pamphlet directs children to six water animals, twelve land animals, and six air animals. Easter egg Hunt is an Easter variant of a regular Naturama pamphlet where children mark an x next to animals which they find in the exhibition. The museum makes a Christmas version as well, where children are asked to find Christmas gifts which one of Santa's helpers has lost.

An example of a text based pamphlet is "Water, Land and Air", it is in a A5-format, stapled in the centrefold, and holds eight color-printed pages. The pamphlet consists of a number of questions which visitors are supposed to find answers to, and instructs visitors where to obtain these answers. The exercises are biology questions about identifying animals or parts of animals, and about what animals eat and where they live.

Exercise pamphlets prescribe action

Exercise pamphlets prescribe certain patterns of action. They want visitors to do specific things. The exercise about the brown bear, quoted at the beginning of the chapter, shows this clearly. The exercise pamphlet directs the user to locati-

ons in the exhibition: "*Find me on the computer"* and "*Find me in the exhibition"*. The visitor is instructed what to do with the bear "*Feel how silky my fur is"*, and is oriented toward specific aspects of the animal *"Mark what I eat"*. Pamphlets instruct interactions with specific exhibited objects, and also set out a route through the exhibition. They indicate that the exhibition is divided into three floors, and a sequence between the floors: first Water, then Land, and last Air. Some pamphlets also direct visitors to the old part of the museum. A 10 year old girl who is solving a text based pamphlet reads out loud from the pamphlet: "Where are the kin when the adults look for food?" and as a direct reply to this her father says: "We have to go to the old museum."

Exercise pamphlets prescribe certain patterns of action and visitors tend to cooperate. Visitors walk, sometimes almost run, around in the museum, searching, with a pencil and exercise board in their hands. Nine year old Johannes is doing an Easter egg Hunt. He is on Land, looking at one of the animals on the podium, he moves around a little, searching, suddenly he yells out, and moves forward at a much higher speed. He has the exercise pamphlet in his hands, raised up in front of him. He has seen an animal with an Easter egg next to it. Johannes leans over and uses the podium to support the exercise board, he flips a page and says "which one is that one?". He continues pondering the exercise board, then points to a picture.

"It's this one." Having marked off the animal, he keeps looking at the exercise board. He flips one page forward, and one page back, then he says "we also have to find…" he doesn't complete the sentence, he just points to a picture on the sheet. After a while of looking back and forth between the pamphlet and the podium, Johannes flips the pages closed and stands up straight.

Visitors act in accordance with pamphlets.

Why in the world are the children so compliant?

Mother to Niclas (10) and Nicolai (11) says, "It is a good way… often when we've been somewhere with the children, and they've had to try to stand and read the small signs that are there… at the zoological museum or at the zoo, it isn't interesting in the same way. This is probably more the brave new world, and it interests them and it is more fun for them to find information on their own."

A woman accompanying 10 year old Torkild says about the pamphlets: "they make children look more into things, instead of just walking around looking at what is going on. They become much more motivated to explore things, when they have a set of exercises. This inspires to explore things, whereas in the old museum, everything was just served for you."

Torkild compares solving exercises to being on a treasure hunt, and he loves it. Pamphlets mediate a mode of visiting which appeals to children. They get engaged in the activity which provides the possibility of exploring the museum on your own and with a task at hand which makes the museum visit resemble an adventure, a treasure hunt. Reaching back into the museum literature we can say that exercise pamphlets offer active participation and interaction. Visitors are offered the possibility of doing instead of seeing: being actor instead of spectator. Visitors can be on the move, exploring the museum, scouting for things. Pamphlets make the exhibition useful to visitors in a very tangible way; it provides answers which in the end may be traded in for a prize poster.

Pamphlets establish relations

The pamphlet draws together certain entities in the exhibition, and establishes connections between these and visitors. Exercise pamphlets direct and position users in accordance with their content and purpose: some exercises orient the user towards objects in the exhibition, others direct the user to computer Nature Bases, where visitors then sit or stand, searching, with a pencil in their hand and exercises on the table in front of them. Exercise pamphlets create a need for Nature Bases. They help enforce this media, because answers are found on the computers.

"Can you find your way around on the Nature Bases?" I ask 13 year old Sebastian.

"Yeah, if you know what their name is if you know what the animal is that you're looking for."

"So you have to know what the animal is, or…?"

"Yeah, if not it can be really difficult."

"and if you can't figure it out, what do you do then?"

"Then you have to look for the animal in the exhibition, walk around and see if you can find it and stuff like that."

Pamphlets and Nature Bases mutually enforce one another, and the exhibition becomes a backing reference, a resource which may be used if the visitor can not find the answer on the computer. When visitors don't know the name of the animal they are looking for, the computer isn't of much help. Sebastian tackles this by walking around, looking for the animal in order to get its name so he can obtain information about it on the computer.

A similar strategy, although with a twist, is used by Torkild, who is at the museum for his third time. He explains how he solves exercises by first finding

an animal in the exhibition and then going to the computer.

"You go and find the animal, and then you can read what it says there."

"And what does it say?"

"Well, it says, for example, if it is a sparrow, then it has this number, down below on a sign, a little sign, a medium sized sign, and then you can go to the computer and read on it," Torkild explains.

"OK. And what are the exercises about?"

"Well, that you have to walk around and find the animals and stuff."

The pamphlet works relationally; it establishes a relationship between several entities: itself, the boy, the sparrow, the sign, the number, the computer. Several entities are related in an action net which emerges because the pamphlet asks a question and the boy wants to find an answer to it. Torkild has a specific strategy for obtaining answers. He is familiar with the information architecture of the exhibition, and knows how to work his way around in it. He doesn't even have to remember the name of the animal in order to access information about it on the computer, he just has to have the little number from the sign. That Torkild knows about this number shows that he knows the museum well. It is not a number which draws attention to itself, nor is it mentioned in pamphlets.

The exercise pamphlet sets out some trails which Torkild follows; he moves around in order to obtain answers. When answers are found, information is transferred from one deposit to the next via a sign from a computer to an exercise pamphlet. With exercise pamphlets, the exhibition takes on the form of interrelated information deposits. Information is contained in different locations and the visitor moves information from one place to another. Torkild, Sebastian and their fellow pamphlet solvers look for solicited information and feed their pamphlets with it. Visitors dig out information from one container and transfer it to another, and so fill empty pamphlet stomachs.

Action program: exercise biology

The association of visitor, pamphlet and exhibition materializes information about food, physical appearance, habitat and behaviour. This information translocation may be traced to an intention which is built into exercise pamphlets: an intention of teaching children biology. The task of transmitting biological facts to visitors has been delegated to the pamphlet and its allies. Various entities are assembled in order to obtain this goal. The pamphlet makes reference to Nature Bases, to signs and exhibition computers, and is further enforced by a number of other entities, most significantly the prize poster. These assembled entities

together carry a program of action. They prescribe a characteristic approach. The exhibited animals are made into objects of biology; objects to be identified, described and categorized as biological facts. They are enacted as a representation of something which is not here in this encounter (habitat, behavior, food), but which nevertheless is staged as the real version of the animal. The exhibition is made into a source of information which gives biological voice to mute animals, conjuring animal realities which otherwise would remain silent, unarticulated. It is a rehearsal of specific biology content. With reference to Serres we can say that pamphlets enact a procession of ideas, a theoretical parade which children are asked to line up and walk in (Serres 1993/1995: 91). In this process(ion), the exhibition is communicated as a place of right and wrongs, of knowledge which is not up for negotiation, and visitors are made into receivers of knowledge. The exercise pamphlet performs the visitor as an object of educational effort, as somebody who with benefit could be more informed about biology and natural history.

Mode of visiting

A pamphlet mode of visiting is a scholastic performance, a performance of information transmission. Children are staged as vessels to be filled, and the idea is that by solving exercises, knowledge is filled into them. But knowledge is actually not filled into *them*, but into a hybrid version of them, it is filled into pamphlets, which in this sense become an extension of visitors' minds. The visitor's mind is hybridized, distributed into the pamphlet. When information is filled into the pamphlet, this symbolically is an act of filling information into the child. The child enters the museum as lacking knowledge, is coupled to a pamphlet, and with the completion of this pamphlet, the child also is made complete. The pamphlet both enacts a lack of knowledge and is a remedy for this lack. In this program of action there is a clear division between the *knowing*; the institution which knows what knowledge is important, and the *not knowing*; the visitor. This represents a model of communication, where the sender is believed to have access to objective knowledge and the receiver is seen as a recipient of information. The receiver is induced to act in certain ways and to believe certain things.[1]

1 This transmission oriented model of communication is widely challenged by a receiver oriented model, as is mentioned in chapter three on museum studies. Receivers play an active role in communication. Receivers are free to select among multiple messages and they interpret messages in accordance with their own experience and interest (Hooper-Greenhill 1995; Kragh 1999).

Pamphlets dictate, visitors write. Children are asked to fill out blank spaces in pamphlets, and they are asked to fill out empty spaces between exhibition media. Their contribution is scripted, they are asked to write and walk in predefined forms. And apparently it is more important to *do it*, than to *do it right*:

"and if you mark the wrong option?" asks a father. The employee at the front desk remarks, "Yeah, oops," smiles and continues informing them that they will receive a prize when they hand in the exercises.

"If all of the answers are correct, or what?" asks the child, following up on her father's question. The employee replies: "Narh, also if you've made a few mistakes. That would be ok."

The exercise pamphlet has a strong symbolic value, with it the exhibition is performed as a place where visitors search for and find knowledge. Children who work on exercises are perceived as being in meaningful interaction with the museum; it looks like they are learning biology. Exercise pamphlets mediate legitimate enactments of science communication. They enact a serious and beneficial mode of visiting which consists of orderly encounters between visitor and exhibition, a mode of visiting which is not offensive or disturbing, as we shall see other mediated encounters being.

There is a common consent that 'it works' to do the museum with pamphlets. Museum staff like the way the children approach the museum when they have exercise pamphlets in their hands, the prize, parents and teachers keep children to the task, and children like the activity. And contrary to the positioning of the child as a passive receiver of information, users play quite active roles in establishing connections between various exhibition media.

Users compensate for inconsistencies

There are inconsistencies in the fit between pamphlets and exhibition; they refer to each other, but sometimes a bit loosely. This implies that the information architecture itself steps into focus, and becomes the matter for problemsolving. Visitors may spend considerable energy, not so much on contemplating the answer for a question, but on contemplating the fit between questions and answers, and more generally the fit between pamphlets and the exhibition's information architecture. Users have to work on making ends meet. There are several examples of this. Confusion may occur as to where answers should be found, about the relations between questions and answers, and because of inconveniencies in specific media. There may be a lack of clarity about where answers are located, are they to be found on Nature Bases for example? It is the obvious expectation of

visitors that all solicited information may be found on Nature Bases, but once in a while museum staff generate questions from a printed poster, and this specific piece of information may *not* be on the computer. This is a source of confusion for visitors who approach the Nature Base with expectations that it is like the Internet; that everything can be found on it.

Confusion may also arise because of signs which look as though they may be relevant for a pamphlet, but aren't. When visitors are equipped with pamphlets, they look at the exhibition with a pamphlet optic, and this implies that all signs are considered as potentially related to the pamphlet. In various locations in the exhibition are some signs with 'posts' which refer to one specific exercise pamphlet, but not all pamphlets refer to these posts and that creates confusion for some visitors.

Another crucial issue is the relation between questions and answers. A 10 year old visitor is looking for Easter eggs, but she is confounded. In front of her are three porpoise. One of them has an Easter egg, so she is supposed to put a mark by the picture of the porpoise on her exercise sheet, and the thief does *resemble* the one on the picture, but it is not *the one*. The one on the picture and the one with the egg in the exhibition are not identical.

"This one is black and white – and this one is grey," she says.

"It has to be this one, look Dad."

How literally should questions be taken? Is it right or wrong to mark that the porpoise has stolen an egg, when actually it is the neighbor who has the egg? A minor inconsistency in the placement of eggs is here spotted by the attentive viewer, and creates some doubt about how to answer this question – does the picture refer to the species, or does it refer to the single animal? The visitor ends up using her common sense; why would there be an egg by an animal which is not depicted? And besides, she remarks: "this is only for fun, so it doesn't matter so much, we don't have to take it so seriously."

She plays along and puts an x next to the porpoise.

Clarity in references is a crucial issue in the relations between pamphlets and information sources, but clarity is also a challenge with specific media, ranging from the quality of a specific question to the user-friendliness of Nature Bases. For example: Does a young bird resemble a rock or a cone? That is a question posed in a multiple choice pamphlet, but obviously this is a question which is open for interpretation. The visitor thinks a young bird resembles a cone, the person who devised the question thinks it resembles a rock - so the visitor's answer is wrong?

Visitors not only work on answering questions, they also work on making

meaning *out of* questions, and on making meaning *in the associations between* questions and answers, between exercise and exhibition. The relations which exercise pamphlets prescribe are not seamlessly designed, they carry inconsistencies, flaws and inconveniences. As pointed out in the museum literature, visitors actively construct meaning out of exhibitions, and obviously this also applies for visitors who solve exercises in exhibitions. Users find ways of coping with incoherencies, insecurities and loose connections. Sometimes it takes a little flexibility, a little tinkering to establish the right connection. Visitors tone down the importance of 'correctness', and they ask other visitors and staff for help. Visitors tackle the misfits in the name of the game. They figure things out and make do.

Visitors actively contribute to establishing pamphlet action. Or rather: *some* visitors contribute actively to pamphlet action, for pamphlets may be faced with quite distinct circumstances depending on which visitor or family they are handed to.

Families with pamphlets

Two girls are visiting the museum with each of their families, each girl is doing exercises, but under different conditions of collaboration. The pamphlet coupled to 10 year old Bea finds itself being a central coordinating object, an object which a whole family relates to and which Bea cleverly coordinates. Another pamphlet, coupled to seven year old Fie, does not experience this sort of cooperation. Fie's relatives do not easily succumb to her pamphlet, but this does not keep Fie from putting up a brave fight for pamphlet action.

Coordination and delegation

Bea is at Naturama with her family: father, mother, twelve year old brother and two younger sisters, one age seven, the other age two and in a stroller. Bea and her family visit the museum during the Easter vacation, and at the front desk they get two exercise pamphlets, the simple exercise about finding Easter eggs and a more difficult pamphlet called Scrape an Egg. The family has just embarked on the visit, and is on level Water. The whole family participates in finding Easter eggs. They yell to one another to draw attention to eggs that they find.

"There is an Easter egg over here as well!" – little sister calls out from her position close to the killer whale.

"I'm on the walrus," Bea says in a loud voice.

"Over here," little sister yells again.

"Have you seen this one?" Mom calls out.

"And there is one here," little sister exclaims.

They are a net of active agents spread out in the water, trawling the bottom of the ocean for eggs. Bea holds the exercise board, and she is a central node in this action net. Her relatives report in to her. She is the reference point, the place where egg/animal relations are registered. The whole family is engaged in cooperative action which emerges in relation to the exercise pamphlet. The pamphlet gives the family a point of interaction, it provides them with something to do together, something to interact with, interact through and interact about. The family's interaction is centred on the object, and their interaction is stabilized into a specific form. In this specific situation, with this specific family, this specific pamphlet creates participation, cooperation and conjoint action. It pulls the family together, everyone participates in the Easter egg hunt. The visitors are coupled in activity which emanates from and evolves around the exercise pamphlet.

This goes on here, for Bea's family, but it also occurs for children who cooperate on doing a pamphlet during school visits. Users are linked to and through the pamphlet, to each other, to exhibited animals, to exhibition media in the form of computers and signs, and to the educational objective of the museum.

Performed in this way the exhibition is a domain of work – of purposeful, problem-solving activity. At moments, Bea is actually disturbed in other more leisurely dwellings because she is the one who carries the pamphlet. A short time after she and her family have arrived at Water, a film starts, Bea stands in front of the screen, she wants to watch it.

Referring to an egg, Bea's mother asks: "Have you seen this one Bea?"

"Yeah. I wanna watch this movie..."

She has to say this explicitly to her relatives – she is suspending the order of the pamphlet and exercising her own agenda for a moment. When the film starts, she watches it, but during the film, she asks her father something about the exercise pamphlet. She has a double awareness – she watches the film, but she also thinks about the pamphlet.

Bea is in a leisure space, but she performs hard work. Initially Bea was reluctant to couple up with the textbased Scrape an Egg pamphlet. When they got it at the front desk, she didn't want to carry it, she said to her father that he could carry it, and that they "didn't want to do it now,'" but later, an hour into the museum visit, and with help from Bea's father the pamphlet has gotten a hold of Bea, she is intently working on it - while she is still also coordinating the completion of the other pamphlet.

Managing two pamphlets

They are on Air. Bea works on the difficult Scrape an egg pamphlet with her father. Her younger sister comes along and Bea asks her, "Have you seen an Easter egg?" Bea is both engaged in the difficult pamphlet which she is working on with her father, and she is aware of the easier Easter egg pamphlet, and whether her sister has something to contribute to this pamphlet.

"There aren't any," her younger sister replies. An hour and ten minutes into their museum visit, Bea's little sister is sick of it. She wants to do something else.

"Aren't we through here? I want to go somewhere else."

Bea doesn't reply, but reads out loud, "Go to glasmontre U in the passageway."

"I'll do as you say, but really…" the girl replies. Bea continues reading.

"There is an eagle owl there, which has an egg."

Now that the younger sister is present, Bea engages her in the more difficult pamphlet. She delegates work to her relatives and orchestrates them as information providers. Bea turns her attention back to her father and says: "Dad, did you find out at what time of year the hawk is found in Denmark?", after having asked this, Bea's attention is caught by a guide's voice, she happens to overhear a fragment of a guided tour, and understands to put this to use as a provision of answers as well. About the guide and directed at her father Bea says, "She gave two answers before. She said 'in dunes and moors', and she also said something else. She said 'it is in Denmark during the summer, and most birds find Denmark cold at winter' and so they probably won't go somewhere else, where it is more cold, so let's say Africa."

Bea coordinates several activities which are anchored in the two exercise pamphlets. She is simultaneously managing two sets of exercises, two action nets and the enrolled family members. She delegates tasks to her younger sister, monitors her father's work, and makes use of a human Nature Guide as answer supplier. She furthermore organizes the work to be done: Trying to get an overview of where to find answers Bea groups questions in categories; they have to find the answers for these four on a computer, she uses her pencil to mark them with a *c* for *computer*. She collects information and coordinates the activities of her large family. Bea is an efficient pamphlet manager who solves the task at hand and museum visits are social situations where family members play central roles in how the course of action develops. Solving exercises may take place as cross-generational cooperation – or noncooperation, as we shall see in the following.

Annoyance and negotiation

Seven year old Fie is at the museum during fall vacation. She is there with her brother who is 10 and their mother and father. The family starts their visit on level Water, Fie, Father and Mother stand in between the huge sei whale skeleton and the walrus. Big brother Teis has wandered off. Mother who is holding a mass of papers which the family got at the museum front desk, has noticed some exhibition signs reading *Post 1* and *Post 2*, so she is going over the papers to see if they mention any posts. Fie has seen a girl at a computer, and thinks that the family should move to the computers to find information for pamphlets, she keeps trying to communicate this to her mother. Mom doesn't know what she is talking about and becomes annoyed with her. Dad knows that some exercise sheets do refer to computers, and actually Teis has gone off with such a pamphlet. Dad tries to tell this to Mom, but is interrupted by a stranger asking for help with pamphlets. Dad rejects to help the stranger: "No, we've just started." In all of this commotion Fie's attention is caught by a quiz pamphlet, it is a small piece of paper which offers participation in a competition for 252 ice creams. Fie snatches the paper out of her mother's hands.

Big brother Teis stands at a Nature Base. A pamphlet lies in front of him. He looks at the screen and uses the mouse to scroll. Teis works on the exercises until his father calls out for him twice. The second time his name is called, the boy stops his pamphlet activity and joins his family. Mom and Dad stand holding a bunch of papers between them, Fie is seated on a podium holding a single sheet of paper. When Teis steps in next to Fie, she pulls the pen out of his hands.

"Teis, may I borrow that."

Fie bends over while she mumbles "mmm", she writes on her quiz pamphlet, using the podium as a table. She writes *polar bear*. Then she finds out she needs help: while pointing to the third question on her pamphlet, she asks her mother,

"What was this one?" Her mother is occupied with Teis' pamphlet, slightly annoyed she says "a penguin". Fie focuses on her quiz pamphlet again, she writes *penguin*. When she looks up she realizes that her family has gone off. She goes after them. They are talking, she interrupts.

"Dad, is it a musk ox?"

"Come on, really, we are doing something else right now," her father replies. Fie's mother ignores the girl and asks Teis, "Where is that narwhal?"

"It's over here," Dad replies.

Fie starts singing.

"Nar-whal nar-whal. I know where you can find that nar-whal. Hey – Karin, is

this not a musk ox? Mom is this not a muscle ox, musk-you ox?" Mom doesn't reply.

"Have you read this?" Mom asks, looking at Teis while pointing at a sign.

"I think we have to go upstairs and around..." says Dad.

Different exercise pamphlets pull family members in separate directions. Teis' pamphlet pulls, but so does Fie's. Fie is pulled by her pamphlet, and she in turn tries to pull at her family. Fie is rejected and ignored, her parents feel that they have already dealt with her and her pamphlet, but Fie didn't catch on to the answers which the parents provided in an earlier exchange. She now again several times tries to involve her relatives. When she doesn't succeed, she lets her pamphlet rest for a while, but she still wants in on the action, so she attempts to contribute with information about the narwhal, to enrol herself in the activity taking place around the other exercise pamphlet. In her third attempt at establishing contact with her relatives, she asks: which pamphlet are they are working on?

"Mom what exercise are you doing? Is it this one or what?"

"This one," Mom says and shows it to Fie.

When Fie has her mother's attention she clings to it.

"OK. Let me see. What does it say?"

Mom reads a long question about the narwhal aloud, and then moves towards a sign where the answer is found, and reads another lengthy passage aloud. To all of this Fie in a mute voice and in between hiccups replies: "OK. So write that," and then she starts singing to herself. Fie is aligned with the action which occurs in relation to Teis' pamphlet, but she is not engaged. Her mother shares a stream of words with her, Fie doesn't have anything to contribute, nor is she asked to. The action emerging from this difficult exercise pamphlet is not her action. She sings to herself, and after a brief moment again settles her attention on her pamphlet. She doesn't know what to do about the musk ox, but she finds some other empty spaces she can fill out: her name and address. After a minute she again needs help.

"Da-ad, my phone number, isn't it 25482977?"

"Yeah."

"Thanks."

The interaction in Fie's family shows the force of two different pamphlets counteracting each other and creating a mild tension in the family. Family members negotiate which object they should focus on, which pamphlet should be allowed to pull them around and where they should go.

The family communicates in search of mutual agreement. While they walk around together they negotiate verbally about what to do, and most of the time,

they do not reach to an agreement, but in the situation where mother and father get involved in Teis' pamphlet, these three family members do not only move together, but also act together. A spark of shared intention and conjoint action emerges. Teis-pamphlet action is made into Mom-Dad-Teis-pamphlet action.

Most of the time, the family does not act together, but exercises a bodily agreement of proximity. The family sticks together as they walk through the museum, but there are exceptions: They walk up the stairs from Water to Land. Once again Fie tries to involve her parents in her quiz pamphlet. She reads background information about the contest out loud from the pamphlet. While walking up the stairs, Fie suddenly comes to a point where she sees some exhibited musk oxen through a vista opening in the wall, and she must recognize the oxen, for at that point she joyfully exclaims – "I have found the one for our last missing question!" At this point her father says: "Those exercise pamphlets should be banned!"

Apparently unaffected by her father's remark, the girl asks for permission to go find the answer. Permission is granted and the girl takes off like a drop of fluid which surface tension sends off from a larger body. She is magnetically pulled to the ox. While approaching the Arctic podium, she passes numerous animals – elk, bear – but she does not stop on the way. She proceeds directly to the musk ox. Later, when Fie has the answer, she passes the elk again, her father points it out to her, and she says: "Whoooa, is that really an elk – is it really that big? I don't believe it I think they've made it bigger!"

Fie sees the musk ox from afar and through a hole in the wall. She sees *the one,* the answer for her last missing question. But does Fie actually *see* the *musk ox*?

When Fie arrives to the musk ox at the Arctic Podium, she looks around a little, sees a column sign. The text is in English.

"English," she says and moves around the column sign.

She finds the Danish text. Reads out loud: "Musk ox, it <u>was</u> a musk ox."

She writes on her exercise sheet while vocalizing.

"Muuuuuuuskk –oooox." She continues writing and vocalizing.

"Ooooooooooo-x." She turns around and sees her brother.

"Fie," Teis says. The girl looks at him, triumphantly.

"It was a musk ox, like I said," she says. She hums, stands, looks around a little. When Fie arrives at the Arctic Podium she doesn't actually look at the exhibited animal. It acts as a sign which she recognizes from afar, but when she is close to it, she doesn't explore it further. The animal is translated into an answer. The object that she looks at is the poster-sign which is placed a few meters from the podium, and which holds a picture of the musk ox and – a text – *the text*, the

confirmation she has been looking for: the small square picture on her piece of paper *is* a musk oxe, the answer which she has traversed ocean and earth for.

The association between pamphlet, visitor and exhibition is negotiated. Various forces influence the course of action. Pamphlets may counteract one another, competing for visitor attention, pamphlets may find themselves outmanoeuvred by other nonhuman entities, and last but not least families may tackle pamphlets in quite distinct ways.

Instrumental prescription optics

When pamphlets are succesfull the constellation of visitor and exercise pamphlet enact a specific gaze. What kind of information children look for depends on the pamphlet. Father to Niclas and Nicolai, ages 10 and 11, says: "You see more about the animal, [look] more at the animal, right, instead of, if you just pass by it, right, if you walk past a horse, what the fuck, that's it. Here they have to answer some questions, so I think they get further, they get more in-depth with the animal."

The optic of the exercise pamphlet brings with it an orientation towards answers which in some cases may consist of in-depth information about an animal, but only in some cases.

Bea (10) and her older brother Anton (12) walk down the stairs to Water. Bea carries an exercise pamphlet where the purpose is to find animals who have stolen an Easter egg. The two children are engaged in conversation, they talk about polar bears and climate changes.

"Wow, that is really a big polar bear," says Bea.

"Yeah. Gigantic. - But they are growing extinct."

"Why are they growing extinct?" asks Bea.

"Well, because the ice is melting, you know. - And they are called polar bears. They live on the ice, and so they won't have any ice to live on."

"What a pity for them, huh," the girl says, and continues, "I wouldn't mind having polar bears in Denmark" she then thinks twice about what she is saying and quickly cuts off her own sentence by saying, "No, no!" Bea then sees an Easter egg next to a walrus and suddenly cries out.

"It has stolen an Easter egg!"

"Yes! It has!" her brother eagerly replies.

"Juhuuu..." Bea hollers and they take off running down the stairs.

The exercise about finding Easter eggs provides an optic which sees Easter eggs. Easter eggs become the interesting thing to be oriented towards, to look for. The exercise pamphlet and its Easter eggs distract Bea and Anton from a conversation

about polar bears and climate changes. In Latour's terminology: the Easter egg Hunt pamphlet becomes an antiprogram to the program of teaching children biology. The child-pamphlet constellation brings with it a somewhat instrumental approach to the exhibition, the exhibition becomes a tool. It is used for its ability to provide answers. Children scan the exhibition for relevant material and on this quest objects which are irrelevant to their purpose are ignored.

Pamphlets prescribe and participate in a certain mode of visiting which is governed by the idea of information transmission, but pamphlets also perform mutiny against this intention. Pamphlets do not perform one order, they perform multiple versions of this order, some more successfully aligned with the overall intent of teaching children biology than others. Pamphlets prescribe a mode of visiting, but this prescribed order is not singular, it consists of multiple orders, there is a tension between the ways different pamphlets adhere to the prescribed order, and some pamphlets may actually invite to action which runs quite contrary to the intention of teaching children biology. The situation where the polar bear is outmanoeuvred by an Easter egg is an example of this. Objects carrying didactic intents which are not embedded in pamphlets are turned into background noise, they are unimportant, irrelevant.

There are tensions in the ways different pamphlets enact a pamphlet mode of visiting, but each pamphlet also contains multiplicities. Each pamphlet may be broken down into multiple, overlapping modes of visiting. The intent of information transmission co-exists with other relationalities, for example where the visitor is asked to touch a bear, and thus to engage in a sensuous relation between hand and fur. There are gaps in the order. A pamphlet mode of visiting has a strong element of information transmission, but the overall guiding principle when visitors use pamphlets more appropriately is that of *completion*. The pamphlet launches a treasure hunt, a journey, an adventure. With the pamphlet the exhibition becomes a space to be completed, done, regardless of pamphlet content. With exercise pamphlets, the visitor's approach to the exhibition becomes focused, goal-oriented and somewhat instrumental. When exercise pamphlets solicit information bits from Nature Bases, these are what children look for. When exercise pamphlets are about Easter eggs that is what the children scout for. The exhibition becomes a tool for solving the exercise pamphlet. Exhibited objects and the surrounding information architecture are looked at for their ability to feed into the exercise pamphlet. The exhibition becomes a place to be completed, marked and checked off.

Doing pamphlet space-time

The completion of the exercises gives the visitor a sense of termination. When the pamphlet is done, the space is done. This may both be desired or regretted. Seven year old Fie says to her relatives: "Come on, let's do the exercises now, so we can move on", and on the other hand 10 year old Torkild expresses regret that there are not *more* exercises to solve. The exercises are the best thing about the exhibition, and he wants to stay longer in this state of being.

The exercise pamphlet not only acts as an optic, it also acts as a way of registering what is seen, as an inventory. Things are registered by the simple means of putting an x next to an image on a sheet of paper. This has the interesting effect that objects have to be marked, in order to really have been seen.

"There is an Easter egg over here as well."

"Yeah, we've seen it, we just haven't put an x – now we've put an x."

"Have you put an x by the walrus?"

Pamphlets enact an activity which has a limit in terms of space and time, when it is completed it is completed, but it also enacts temporal flexibility. The exercise pamphlet may be stopped and started at the convenience of the visitor. The work which is carried out by the pamphlet - with its inherent flaws and deficiencies - may be compared to the work of a human guide. The pamphlet has an agenda, it has things it wants to point out to visitors. It has an opinion about a beneficial order to the visit, but compared to a human guide, the pamphlet has an advantage of temporal flexibility. The visitor doesn't have to be at a certain location at a certain time in order to experience the guided tour of the pamphlet. This may be an advantage for families who have the needs and wants of several family members to take into account: babies who are hungry, grandparents who crave coffee, etc. The pamphlet is flexible and permits more freedom in timing for users than a human guide does.

The same kind of flexibility is present in terms of space. The pamphlet enacts a specific spatial order, but it is also just a piece of paper which hardly takes up any space and which easily may be disregarded, stuffed into a bag. The presence of the pamphlet is not as dominant as that of a human guide. The visitor is not obliged by norms of courtesy and good behavior. The rules of conduct which help enforce the human guide are not there to support the pamphlet. This is both a weakness and strength for the pamphlet. Visitors may discard, ignore, and reject pamphlets taking no consideration whatsoever of the feelings of the pamphlet.

Gathering. Exercise pamphlet hybrid action

The act of solving exercises brings a certain order to the museum visit. It organizes the visit both in terms of time and space, and sets the tone for the encounter. Pamphlets, visitors and exhibition mutually enact one another. Pamphlets attempt to prescribe what visitors should look at, do and where they should go, but pamphlet prescriptions are also counteracted by the will and intention of numerous other entities of heterogeneous constitution. When pamphlets, visitors and exhibition are associated, an action net emerges which among other things enacts facts about biology, and which does so by finding information on computers and signs and transferring this to pamphlets. The mode of visiting which emerges in associations of pamphlets, visitors and exhibition is governed by an urge for completion. There is a reciprocal logic at play where visitors seem to be completed by doing pamphlets, and where the exhibition itself also becomes a space to be completed.

Pamphlet action involves whole families, and sometimes several pamphlets are at play simultaneously in one family. The commitment of individual family members ranges from cooperation to rejection. Exercise pamphlets may divide visitors and create conflicts among them, and visitors may be pulled in separate directions by different pamphlets. In one family a father gets so sick of his daughters persistent attempts at getting him involved in a pamphlet that he at a point exclaims: "These exercise pamphlets should be banned", in another family the conflict is not so explicit, but there is conflict. The association between exercise pamphlets, visitors and the exhibition is negotiated in a field of socio-material forces, and plenty of obstacles are found on the trail which associated pamphlet visitors walk. There are difficulties to overcome and other pamphlets to outwit.

Pacifying Prince Pamphlet

Once upon a time there was a young pamphlet, Pamphlet was his name. He lived in Exhibition, a kingdom of marvellous sights and natural objects, and although Pamphlet was a young prince he had various responsibilities in Exhibition. He governed creatures of water, land and air, and he had a special chore which he was expected to carry out every day. You see, Exhibition was a kingdom which received a great many visitors and this was pamphlet's chore: along with his sisters and brothers he was responsible for showing visitors some of Exhibition's particularly interesting sights.

Pamphlet had spotted the visitor he wanted to show around today. There was always a little friendly competition going on between the princes and princesses, competition for who got the best visitors. Pamphlet glanced at the girl from the side. He was sure he had seen her before, not that she was an inhabitant of Exhibition, no, no, she was from Elsewhere, that was for sure, but he had definitely seen her before. She looked sweet, around seven or so, a bit young perhaps, and not as influential as older girls, but she was a nice girl, Pamphlet could tell just by looking at her, and he himself was not that old either. He was not large, some might even call him small, he was one third of a piece of paper, printed on both sides. He wasn't the big bully kind of pamphlet that his older brothers were, but he held promising possibilities nevertheless, possibilities which he was proud of. By acquaintance with him, the girl could win two hundred and fifty two polar bear ice creams. 252! All she had to do was walk along with Pamphlet in Exhibition while he pointed out sights to her, and while they were doing this they would answer three questions about something from Exhibition.

Yes! Pamphlet had sort of thrust himself out of the paper container which stands on the front desk at the entrance to Exhibition, and it had worked, the staff person had picked him up and handed him to...

Pamphlet looks up.

That is not the girl. It is a smart-looking, grey-haired woman of 54. Grandma.

She turns out to be quite a problem.

At first things go OK. Grandmother is attentive to Pamphlet. She wants to get to know him, but she does not feel that she can do this right here at the front desk.

"Is there a place where we can sit down?" she says.

"Wait a moment, Mia, we have to write this.

"Let's sit down on the staircase and fill this out."

Pamphlet is surprised, is she talking about him? She wants to sit down and write him?

"Miiia, come on, let's sit down over here - come here." Grandmother finds a staircase, and she and Mia sit down on the bottom steps. Mia holds Pamphlet up in front of them. For the first time, Pamphlet hears the girls voice, looks her in the eye. She holds him up high so he gets a good view of a pair of green eyes and a small freckled nose. The girl speaks of him. She points to something on him.

"OK. The first one, I know. This one, it is a polar bear," the girl says.

All right... This is not quite the happy playtime, he had wished for. She is straight to the point, isn't she? A bit blunt, he thinks, but then again who is he to complain, she is here, and he has her attention. Her eyes are fixed on him.

Grandmother also looks at him. She reads out loud.

"I live on the polar ice, and if the polar ice disappears, I don't know…" Grandmother agrees with Mia, it is a polar bear. Grandma writes. She fills in the answer to the first question. Mia sits silently next to her.

"OK, what is the next one?" Mia asks when her grandmother has finished writing.

"I live off grass, herbs and leaves which I find on the tundra. If the climate gets warmer, there probably will be less tundra where my family and I can live, I am a..." Grandma reads, and continues speaking: "I think it is a musk ox, and isn't that one a penguin?"

Whoa! This is definitely going too fast, way too fast. The second *and* the third question answered already, and they haven't even entered the gates of Exhibition yet. No, no, no. Pamphlet is worried.

Fortunately Mia agrees, it is going too fast. To her grandmother's current of words, Mia says, "yeah, but, eh, can't we go look…?" Mia wants to go into Exhibition. She wants to answer these questions while she is in *there*. She wants to walk around with Pamphlet in her hand and answer questions.

She *is* a sweetheart.

Unfortunately, Grandma does not react to this suggestion. She stays seated at the bottom of the staircase in the entry area to Exhibition. Her head is buried in papers. Pamphlet realizes that this may not at all go, as he had envisioned. Grandmother has briefly interacted with him, but it seems that she already has lost interest. She is looking at some of the other papers, which she got at the front desk. Apparently she has no loyalty to him. He is just one in the crowd.

Grandma starts reading out loud from a folder. "*Night at the museum*, oh, that is tonight. *Sunday the 14th at 3 p.m.: Ice art, two chunks of ice are carved into a polar bear.*"

"Somebody is making a sculpture out of a piece of ice today," she says to Mia.

"Where?"

"I don't know," replies Grandmother.

Until this point Mia has been quite passive. Pamphlet was beginning to consider, perhaps she actually was too young; maybe she did not have enough will or intention... but now Mia proves him wrong. She perceives her grandmother's *I don't know* as an opening, a chance to exert influence. Mia really likes Pamphlet, she wants to pull him back centre stage, even though Grandmother has moved on to other papers. Mia holds Pamphlet up in front of them, indicating that she has something to say.

"Come on, I know where –" Her grandmother breaks her off: "We have to look at this sweetie, Questionnaire, we have to answer this as well."

Rivaled by Questionnaire. Hmph. Pamphlet frowns.

That Grandma does not know what she is doing.

Mia stands up. Poor Pamphlet, Mia looks at him. To her Pamphlet is so much more fun than that Questionnaire. She holds Pamphlet up in front of her grandmother, as if she is hoping that grandmother will see his qualities as clearly as she does.

"Grandma if we go that way, where the animal tracks are, right, then we can get to know this one, an ox," Mia points to the picture on the pamphlet and continues, "then we can find out about that ox. It is down there." Mia tries the best she can. She tries to tell her grandmother about Pamphlet's qualities; that he has something to show, things to point out, places to take them. Mia wants her grandmother to come with her so they can experience Exhibition with Pamphlet. She tries to explain that Pamphlet has a special connection to Exhibition, she wants to go there with him and she doesn't care about Questionnaire, as far as she is concerned Questionnaire has nothing to offer.

Mia even points out a trail they can follow which will lead them to Exhibition – if they go in there with Pamphlet, answers for his blank spaces will turn up.

"How do you know?" asks Grandmother.

"Because I've been here before."

"OK." Unimpressed Grandma again bends her head and focuses on Questionnaire.

Pamphlet is shocked. How dare she? That Grandma is a real nuisance. With her insistence that other papers should be considered, she is complicating things. Inserting herself (and Questionnaire!) between Pamphlet and his friend; she is keeping them from playing, she is keeping them from moving on, getting into Exhibition, darting around, playing, having fun, scouting for sights. How dare she?

Grandmother reads out loud from Questionnaire, "*Where are you staying,- private accomodation*, well..." she mumbles, continues reading. Mia looks at Pamphlet, she holds him in her hands, doesn't really know what to do. She then sits down next to Grandma.

"This ox, I don't know if it is an ox, does it feed on grass, or what?"

Good try Mia! Pamphlet tries to wink at her, encouraging her to keep up the good work. Absent-mindedly Grandmother says, "Yeah, a musk ox or something like

that." Grandma doesn't even look up. Mia surrenders. She gives up on trying to get her grandmother to do this now. Still holding on to Pamphlet, Mia gets up and pointing towards a rack of posters in the museum shop area says, "I'm gonna go look over there." In-attentively her grandmother replies, "Yeah, do that." Mia takes off. Grandma stays seated, filling out Questionnaire. After a while the woman finds out that she can't get any further. Questionnaire is asking things about Exhibition, and she hasn't been there yet, time to go in then. She gets up from her seat on the stairs and looks around for Mia.

They have only just met up when Mia again starts talking about Pamphlet, about going into Exhibition and finding the answer to the second question. Grandma tries to convince Mia that it *is* a musk ox. Mia doesn't listen. She knows that *Pamphlet* wants to show the ox to her. *Finally*, they go towards Exhibition. They follow the orange bear sticker foot prints on the floor and suddenly face the first breathtaking view of Exhibition.

Finally, pamphlet thinks, *finally*.

Grandma is taken aback by the view from the opening ramp. At awe over the landscape she says: "Wow! Wow, it is really impressive in here!" She stands for a while gazing and then notices that Mia has left her. Mia and Pamphlet hand in hand are headed to the left, up a hallway which leads to Land.

"Where are you going Mia?"

The ox. Mia points it out to her grandmother "I think it is up there, the ox."

Grandma replies, "Yeah, well, we'll see it."

What is it with this woman? Pamphlet usually doesn't build a heavy dislike for visitors, not even adult ones, but he really feels like going over to that grandmother and kicking her. She understands nothing. She is obstructive. Will not cooperate. Is keeping the girl from doing what she longs to do. Pamphlet is about to explode.

Mia holds on to Pamphlet while she tries to get grandmother to go straight to the ox with her. Grandmother won't do it. She is taken in by the exhibition. She is absolutely not receptive to running for an ox. No. No way. Grandmother chatters, she tries to get Mia to touch a bear, points out how sweet a fox is, and there is a wolf, and a Bambi... She suddenly realizes that her words hang alone in mid-air. Mia is no longer with her.

Now Grandmother is finding the influence of that Pamphlet a bit annoying. It is disturbing, distracting. It has put a devil into Mia and is making this visit somewhat different than what she had imagined it to be. She had wanted to walk at a quiet and leisurely pace through Exhibition, holding Mia's hand, talking about the animals as they passed by them. Instead she finds her grandchild having run off with that annoying Pamphlet, and she herself getting stressed by it.

Mia can't move quickly enough past the animals. She heads straight towards the Arctic podium. She arrives. She found it, she found the ox! She got it!

“I think it is this one!” she happily exclaims. She is pleased with herself. She managed to find the answer for Pamphlet’s second question. She made the association between that tiny picture on Pamphlet and the large, brown, longhaired, horned and hoofed animal she is standing in front of now.

“I think it is this one!”

“Yes it is,” Grandma dryly replies.

“But remember to look at the other stuff as well, right?

”Not only the things we have to fill in, right?”

Mia doesn’t quite understand, she becomes insecure, “isn’t it?” she asks.

“Have a look, it is a musk ox, like I said, yeah. It is a musk ox,” Grandma says.

Mia enthusiastically repeats her grandmother’s words.

“Yes. Have a look.”

“And the last one is a penguin,” grandmother brashly says.

“Is it? How do you know that?”

“I can tell.”

What? She can tell? Pamphlet is feeling faint.

This is not good enough for Mia either, she asks her grandmother to read it out loud, to read the question out loud, “What does it say; *lives on* what…?”

Grandmother reads: “It says: *During summer I live off Arctic crayfish which are found in large quantities by the borders of the polar ice. If the ice disappears, there probably won’t be enough food for me and my family. I am a...*” Grandmother continues, “OK, now I am going to fill it in. Because you know what, then we don’t have to think anymore about this, then we can start looking at the different things, right?”

Grandma writes on Pamphlet.

“OK, now you run off and hand it in.”

“Now?” asks Mia, surprised. She can’t keep up. Neither can Pamphlet, he has been clutched so hard in Grandma’s hand that he has passed out.

“Have you written everything?” asks Mia.

“Mmm” Grandma mumbles. She is busy filling out Mia’s address.

252 polar bear ice creams.

Mia keeps on asking Grandma things. She does not really understand what is going on, she keeps asking questions. Grandmother gets annoyed with her. She has reached the limit. She raises her voice, glares at Mia and scolds.

“Now you know what, you’d better relax now, take it easy! You keep going on about this! Now we are going to look at what we actually came here to see!”

To this Mia replies “*Is* it an ox?”

Mia’s grandmother really wants to get rid of this Pamphlet now, in this instant.

The words pierce holes into each other as she spits them out between her teeth.

"Yes, and now it is filled out, and we don't have to think about it anymore, so now we can actually start looking at what is here. And now relax, take it easy!"

Mia tries to ask another question, but is rejected. She is baffled that the fun is already over. None of them says anything for a while, Grandmother writes, thunder roars in the sky above. Then Grandmother says "OK", and Mia then with a soft, little voice asks, "May I show you something?" Grandmother ignores this and says, "And now you go hand this in. Because now I really don't want to think about it anymore. I want to see some of what we came here to see!"

"Now you go hand this in, give it to the lady or - put it in - and then come back here."

Mia runs off with the pale and defeated Prince Pamphlet in her hand.

He says nothing.

Mia pushes the piece of paper into the wide mouth of a large plastic polar bear. He has gobbled up several of this kind before.

7
Mobile phone cameras at the museum

This chapter shows how mobile phone cameras, visitors and the exhibition associate. A mode of visiting emerges which is governed by relentless flicker. The exhibition takes on the form of photographic bursts of energy and the visitor is a flighty eye, constantly on the move. Mobile phone cameras mediate personal versions of the exhibition where visitors gather exhibited animals as objects of beauty, but phone cameras are also disturbing intruders; they steal visitors and insert a space of seclusion into the exhibition. For this reason the presence of mobile phone hybrids are negotiated in the museum's communication practices.

"The iconic status of the mobile telephone among children and teens has been one of the big surprises associated with this form of communication," write Ling and Haddon (2008: 137) in the International Handbook of Children, Media and Culture. Mobile telephony is a common phenomenon among young people and teenagers. This is reported in research from Norway, the UK, Finland, the broader European context, the USA, Japan, the Philippines, and the broader Asian context (Ling & Haddon 2008: 137). A 2009 survey carried out by the Danish Media Council for Children and Young People shows that 81 percent of the 9-10 year olds, 94 percent of 9-16 year olds, and for the age group 14-16, 99 percent have mobile telephones.

Children bring their mobile phones with them where they go, also when they go to the museum. It is common to see children walk around in the exhibition using mobile phones as cameras. They frequently stop in front of an animal, hold up their arm, look at the mobile phone display, look at the animal, click, look at the image on the display, walk on. When the phone is not in the hand of the visitor, it is carried in a jeans pocket.

The teacher of a fourth grade class visiting Naturama says: "Yes, that is something new which we have to get used to – when we were talking about going

here, they asked if they could bring their phones, and I asked *why*, and they said, *because we can take pictures with them*. So that is a new dimension."

Children bring a part of their everyday lives into the museum and put it to use in the exhibition. "Is it forbidden?" asks a girl in an interview about the use of mobile phone cameras. No, it is not. The use of mobile phones is not banned at Naturama as it is in some museums, but it isn't embedded in museum practices either. The technology is not used by the museum in its communication with visitors, as otherwise suggested by advocates for handheld digital media in museums (Mensch 2005; Tallon 2008). Although the museum is not oriented towards mobile phones in its communication with the public, the museum invites and uses photography in other ways. At one location in the exhibition, a large black icon image of a camera is stenciled on the floor, suggesting photography. This is in front of an installation of large whale skeleton bones hanging from the ceiling. The idea is that children may pose for being photographed behind the bones (I write children because the standing height behind the bones is quite low). Furthermore, a recurrent event which the public is invited to participate in is a photo competition called "Shoot Nature" where two age groups (children and adults) may enter photos to be judged and exhibited. Naturama also uses photography and film in the exhibition.

Eating Beauty

Children gather images on their mobile phones. Seal, porpoise, walrus, narwhal, polar bear. The camera creates a point of connection, a point of interaction. It relates the visitor and the exhibition, and it mediates a specific kind of agency.

Ann (12) holds up her mobile phone in between herself and the brown bear. She takes a picture. She keeps the mobile in photographing mode, looks through it, bends over, approaches a smaller animal, takes a picture, stands up straight, looks through the lens while she moves away, turns back, looks through the lens again. Bends over again, this time approaching a porcupine, takes a picture, walks away looking at her phone.

In the photographic act an association is established between the visitor, the mobile camera and the exhibition. The association emerges as the result of a pull from individual animals, the possibility for photography extended by the phone camera, the permission granted by the museum and the interest of the photographer.

When children are asked what they take pictures of and why, the reply is that they take pictures of the animals, and they do so for aesthetic reasons.

"I think they're beautiful."

"They're nice."

"We find them beautiful."

Children take pictures of animals which they find visually pleasing. They take pictures of animals that they like. In this (per)form(ance) the exhibition is small animals which are cute, and which it would be nice to have a picture of, and the exhibition is large animals which are cool, and which it also would be nice to have a picture of.

"We don't normally see them," says a fourth grade girl at Naturama as the reason for taking pictures of animals. The animals are not a part of everyday life, they are extraordinary. Spheres which normally are not accessible are opened up for vision. At the museum, the animals are gathered and exposed. They are demonstrated, displayed. And taking a picture of them extends their existence into the visitor's world, they become the visitor's. This echoes a point Urry makes about tourism, namely that it involves "the notion of 'departure', of a limited breaking with established routines and practices of everyday life and allowing one's senses to engage with a set of stimuli that contrast with the everyday and the mundane." (Urry 2002: 2). Taking a picture of something is a way of marking this something as valuable. It is a way of ascribing value to an object. It is an act of 'making special' – of manifesting that this object exists and is worth collecting as an image. It is making notable whatever is photographed (Urry, 2002: 128).

The animal is made real in the child's world by taking a picture of it. "The snapshot transforms the resistant aspect of nature into something familiar and intimate, something we can hold in our hands and memories. In this way, the camera allows some control over the visual environments of our culture." (Wilson 1992: 122). Photography permits humans to take ownership of nature as a collectable good. The camera provides a way of grasping and containing the encountered. It is a way of becoming involved in and with the seen.

"To photograph is in some way to appropriate the object being photographed. It is a power/knowledge relationship. To have visual knowledge of an object is in part to have power, even if only momentarily, over it. Photography tames the object of the gaze, the most striking examples being of exotic cultures." (Urry 2002: 127). A similar point is made by Crang when he writes of a documentary film which portrays how a group of tourists photographically capture and devour 'cannibals' in Borneo: "… the photo opportunities set up the locals as exotica ripe for capture…" (Crang 1997: 361). This describes an aspect of what visitors do with photography at Naturama. They get close enough to capture wild and exotic

Taking a picture of an animal is a way of grasping an animal. Each instance of photography only takes a moment, but it is practiced as an ongoing activity

animals. The photographer takes possession of the exhibition by taking pictures of it. With their photography visitors perform proximity to the exhibited animals. Visitors are able to get close to them and according to staff, this attracts them. They can get so close to 'real' animals which normally would be off limits, and they can take pictures which make believe that they actually are photographically close to a living animal; that they actually have been close enough to a brown bear to be able to take a picture of its fangs. Photography because it inherently is fixation and stillness, almost makes the exhibited object look more alive, more real than the exhibition does. When visitors move around the exhibited animal, its stillness is evident, it is dead nature. The stillness of the exhibited animal rests well in a photo. Photography does not catch the lack of movement.

The exhibition is apprehended and experienced in photographic acts. Taking pictures manifests, treasures, and real-izes the exhibited animals for the children; it is a way of performing the act of seeing. Taking a picture is a way of saying, I see you, I get you. When a child touches an animal, the tactile sensuous immediacy of the animal makes it present in the child's world. In a similar manner, when the child takes a picture of the animal, the animal – with the visual sense and through a hybrid practice – is made present in the child's world. The animal takes on a new form. It is adopted from its life as an exhibition object to a new life as visual image in a mobile phone. The object is appropriated, it is translated.

Grasping the seen with the mobile phone camera is a way of taking ownership of it, of consuming it. Photography is digestion. The animal is taken in through the visual prosthetic and is contained there, in the pocket or in the hand. The eye is the mouth that swallows the animal, and the mobile phone is both the fork that moves the meat to the mouth, and it is the stomach, the container that digests it. With this consumption the exhibition is broken into small entities, consumed, contained and conserved until it is discarded - thrown away or transferred to another life in another container.

The visitor lays claim to the museum exhibition through the act of photography. The animal is made into the visitor's by the translation from exhibited object to visual image, it is taken out of the public sphere and brought into the private sphere. This act of appropriation may be likened to other ways in which people bring aspects from a public sphere into a private sphere, for example bringing 'nature' into their homes as aspects of decorating (Miller 1998: 15). Posited like this the mobile phone is a private space in the public space of the exhibition, and the mobile phone makes a private object out of a public object. Mobile phone cameras help visitors fit museum objects into their 'already existing

world views' (Hooper-Greenhill 2006: 236). The visitor links up to the exhibition via a familiar medium and does so by focusing on aspects which give meaning to them, namely the size of objects in comparison with themselves, and animals as 'cute' in a teddy bear kind of way.

The exhibition is present in these interactions as that which will be photographed. Users dissect the exhibition. It is cut up into images that are suitable for being photographed and put together again in a sequence of digital images. With the mobile phone camera the exhibition is broken down into a series of glimpses. The mobile phone camera in a distinct way produces new objects, which in some ways live individual lives. They can be shown, they can be printed, they can be multiplied. They can be deleted.

Judged as images, they are not very good. They are dark, they have low density. They are taken from predictable angles. But this is not so important, what is important is that the visitor and the exhibition are associated through the mobile phone camera. The relation between the visitor and the exhibition is stabilized in a specific gathering of images – images which are held in the user's mobile phone camera.

Do mobile phone cameras steal attention from the exhibition? They highlight some aspects of the exhibition, and background others. The exhibited objects are in focus, they form a central part of the vision centered meaning making which mobile phone cameras mediate. The objects form part of visual gatherings, where objects are understood in terms of their appearance and are marked as special via their physical composition. Photography is the capture of a shape, an animal surface. Inspired by Latour (1993: 5) we can ask what is betrayed in this enactment, and one answer to this is that verbal accounts of animals are betrayed. Verbal versions of animals, even animal's names, are not recorded on pictures and children do not necessarily know the name of an animal which they have a picture of. The phone camera assists the visitor in establishing an aesthetic relationship between him/herself and exhibited objects, and more generally: the exhibition. Mobile phone cameras mediate a meaning making which centers around visual images and photographic gatherings.

An intruder from the outside

The camera comes from a world outside of the exhibition and inserts a private space in the exhibition. The phone camera is the only one of the three portable objects which is brought in from the outside. It is not part of the museum's practice, it is part of a user practice. In this sense it is a practice which slices open

the museum, installs an object from the outside in the midst of the exhibition, as a constantly active optic which distorts the visitor's sight. The mobile phone camera does not need institutional enforcement in order to become associated to the visitor, it does not need the promise of a prize poster or the cooperative push of a parent. It is already an integral part of the visitor. When the visitor enters the museum, the visitor is already a hybrid, a camera girl. In this sense doing mobile camera photography may be seen as a revolutionary and innovative act. While using the camera the visitor is asserting who she was before she entered the exhibition and who she will be when she leaves again. Symbolically mobile phones bring the outside world into the museum. Coupled up with discourses of the promises of digital media mobile phones mediate the museum, translate it, shape it. In this cloak mobile phones are legendary, sign-giving, messengers of the future, not entirely unlike Serres' angels. They are a system of networks. They pass through walls. They create disturbance, interference, distraction. They swamp the exhibition space with their omnipresence. They are the multiplicity, chaos and noise which come before the "system of monotonal ideas" - a theoretical procession of ritually paraded words. They make connections and break connections, mess up orders and create new ones (Serres 1993/1995: 91f).

The phone camera repudiates established museum order by introducing a 'new' technology to the museum context. This technology appears new, because it is *new in the context*. In contemporary museum literature mobile phones are written about with an air of exotic, technological promise. They are staged as having a large potential for user-oriented museum communication (Tallon 2008). At the same time, the technology is not at all exotic, it is very mundane. The point made by Kahr-Højland (2007) and Hansen et.al. (2009) about familiarity being an important strength of mobile phones is confirmed at Naturama. Mobile phones are an integral part of the embodiment of older children and pre-teenagers. Mobile phones are everywhere and ever ready. They are an integral part of the everyday life of users. They are always present.

The portable object has multiple identities, it is both private and public, both exotic and mundane (Michael 2000). The mobile phone camera is a hybrid, a multiplicity, a holder of multiple, overlapping orders. It is both a device for calling, texting and photography. The various functionalities which are built into mobile phones all add up in a strong prescription for use. In the museum the phone is performed into one functionality, it is enacted into one specific form of being. It is not used for making phone conversations, for GPS functionalities, for receiving exhibition relevant text-messages. It is used as a camera, as an optic medium.

It mediates a specific encounter with the exhibition, and in this it distorts the exhibition, but at the same time it is an invisible mediator. It draws no attention to itself. When it is engaged in action, its agency steps into the background, it just does its thing; takes a picture. Action passes almost unnoticed across it. Apart from holding more and more images it is not changed in use, as the exercise pamphlet is. It is not worked at, but it is at work, like a scalpel in a dissection; it is in operation. In the moment of photographic action, the photographer is not oriented towards the phone nor towards other people, she is only oriented towards the object of her photography. It, she, and the phone camera mingle in hybrid action. The point of exchange between the human and the world is moved outwards, the sense of vision is extended into the lens of the phone camera. Vision is distributed, hybridized.

The mediation of personal choice

One of the communicators at Naturama points out that visitors use mobile phones in processes of making meaning on the basis of their own preferences. They take a visual aesthetic stand and form their own opinion. She counterpoises this to what occurs on a guided tour.

Nature Guide: "When I show visitors around, I am the one who has chosen the animals, right, the animals they are supposed to hear something about, because I find it relevant for them, but then, when they walk around afterwards, then they can choose something which means something for them, right, not an animal that I have chosen, or the teacher has chosen that they should look at, but something which may be meaningful to them. Then they choose on their own... We select something, and then we say, that, and that and that, because we find it to be a good idea, and a good sequence, but they... they may have another approach and an interest in some other animals."

This guide points out that photography centres on what the visitor finds interesting. It comes with the option of creating personal encounters with the exhibition, and in this process, it comes with the option of creating a personal account of the exhibition. Children perform the exhibition in accordance with their own desires. In this situation the camera is a medium which children use at their own will and which permits them to follow their own interests and create meaning in a way that makes sense to them. When the children photograph, their actions are about placing the exhibition in a medium of their own.

Mobile phone cameras assist children in making specific gatherings of the exhibition. Sometimes fellow visitors interfere with the desired gatherings. This

is the case in the excerpt below, where the bodily presence of a boy is negotiated. On Land, three second grade children, a boy and two girls stand together, they have one phone camera, it is Louise's, but Emma is holding it and she has just taken a picture with it. Paul stands next to Emma, looking at the display, as does Louise. Louise then looks up and moves away from the two other children. Louise, now standing next to the wolf which visitors may touch, right at the entrance to Land, says: "and this one too Emma."

"It's sweet that one," says Emma.

"You have to get the whole body," replies Louise. The boy moves over and stands next to the wolf.

"Move Paul," says Emma.

"Move," says Louise. Paul moves 10 centimeters to the left. A photo clicking sound is heard. Later in the museum visit, Louise goes over the pictures on her phone, the following exchange of words takes place:

"Emma," Louise says, and continues, "Emma, you got Paul totally in there." The two girls look at the phone display.

"I didn't when I took the picture," says Emma.

"No, well, you did, I saw it." Louise deletes the picture and walks across the exhibition over to the wolf where she takes a new picture. Louise who owns the phone is not interested in a picture of Paul. Her friend says that Paul wasn't there when she took the picture (indicating that this might not be the picture she took), but the talk is broken off quite quickly. Paul is deleted from Louise's phone, and a new image is collected – one where only the desired animal is present.

Using John Law's vocabulary, the girl here crafts a specific "out-thereness by condensing particular patterns […] whilst ignoring others" (Law 2004: 113). She crafts a reality, a specific and desired version of the exhibition. The act of taking a picture is a way of making meaning in the exhibition through the creation of a non-verbal assemblage (Law 2004). The girl edits pictures and builds a collection which she finds desirable. With her camera, the girl manifests the presence of the wolf, and silences the presence of Paul. The visitor crafts a specific reality of choice with her camera. The outcome of this process of editing is similar to what Lury calls the *past perfected*. The image is manipulated and reworked (Lury 1998:3).

Value in the moment

Photography is both a reflective, consciously crafted enactment of the seen, and it is a pre-reflective way of seeing – looking at something through the mobile camera, experiencing the exhibition through the camera. Contrary to what one

might expect the purpose of this crafting is not future oriented. The act of photography has value in the moment. "What do you do with the pictures, when you are not here at the museum anymore?" I ask Louise (9). The girl shrugs.

"Use them – I just look at them."

"You look at them."

"Yeah," she says.

"On the phone?"

"Yes."

"Do you show them to anyone?" The girl shakes her head.

"No."

Louise shrugs when she is asked what she does with the pictures after the visit. Apparently this is not really very important. She doesn't take pictures with the purpose of showing them. She doesn't take pictures for the future. She takes pictures for the now, because she likes the animals. She focuses on the current situation and uses the camera as a way of seeing. The act of photography literally is an act of collection, rather than for re-collection.

The orientation towards the present also makes sense to the fact that children take pictures of the animals, much more than of each other. The experience of the present moment governs the photography which younger children carry out. The children do not sacrifice a present moment in order to be able to share with someone in the future. They experience now, through photography. This does not imply, however, that they do not show pictures both now and later.

Ann (12) has just finished taking a picture of the brown bear and the porcupine, and now orients herself to her fellow visitors. She wants to show the pictures she has taken. She looks for her brother, Johannes (9) and their cousin Sara (13). Ann follows the podium curve around to where her brother and cousin are, passes her brother, who looks up from the exercise pamphlet and follows her, Ann doesn't communicate with him, she goes towards Sara (13), who is in front of a podium, with her back towards them. Ann approaches Sara, shows her something on the mobile phone, Johannes (9) first tries to step in between them, but when Ann moves in closer to Sara, he moves over on the other side of Sara. The two girls look at the picture on the phone.

The visitor marks an object as special, an image marks an encounter as an occurrence of intensity, as something worth grasping and holding onto, and this is shared. Fellow visitors are involved as viewers; selected fellow visitors are shown images that have just been taken. Mobile cameras mediate communication between visitors. In the situation above Ann asks Sara to look at the images, she

has created, but the relationship may also be the other way around, where a fellow visitor asks to see the image of an object: Ann and Johannes are in the special exhibition. Ann takes a picture of the huge polar bear. "Can I see, Ann?" Johannes asks. She shows him the image, and then walks away. He follows, exercise board under his arm. Ann goes to Sara, "Polar bear" Ann says, and points.

The mobile camera provides a point of connection between visitors.

Showing pictures later

Children also say that they will show pictures later. The before-mentioned Louise is the only person who does not want to show the pictures to anyone. The other children when they are asked if they will show their pictures say yes.

"To our class."

"To our parents."

"I'm going to show them to my family."

"I'm gonna show them to some of my friends."

A fourth grader when asked why she takes pictures of the animals says: "I want to show them." She was the only person I interviewed who mentioned a future showing as *the* reason for photography. Laura, a girl of 12, mentions both enjoying the moment through photography, and wanting to show the pictures as reasons for photography.

"It's nice, I mean we walk around, take pictures, and enjoy ourselves here."

"Yes – so you like looking at things by taking pictures?"

"Yeah – I think… well, our father isn't with us today, he is at work, so also, so we can show them to him afterwards, because I really like it here."

"Yeah, OK, so you would like to show your father some of the things which are here?"

"Yes – in that way we can sort of share the experience with him."

Thus Laura talks of photography both as a way of enjoying the present, and as something which can play a role in future sharing. Pictures can bridge the absent father with the day the rest of the family is spending at the museum. The mobile phone camera makes connections across time and space, and the association between the visitor and the exhibition which is stored on the phone in the form of digital images is durable for as long as it is found interesting to the visitor.

Movement and rhythm

Photography makes visitors linger in front of an object, and affects the visitor's bodily positioning. The visitor approaches the object in a certain way, and stands

in a certain way in front of the object. With the right hand raised, holding the mobile phone up high, gazing through the camera. Click. In photography, the visitor assumes the position of an aesthetically perceptive and productive subject. She actively sees the museum by taking pictures of it. The visitor is a seeing eye, a hand that holds the camera, a mobile body, and a person who finds something beautiful or the contrary. The photographer wanders. He or she moves around and uses his/her body; moves around to get the right image on the phone. Photography not only involves the visual sense, but is also kinesthetic (Crang 1997).

By the Arctic podium Ann steps in next to Sara "I want to get a picture of that one," she says as she points towards a polar wolf. After having taken her picture she takes off saying, "I have to go get a picture of the hare."

Mobile phone cameras make people move *towards* and *for* photographic opportunities in the exhibition, but the mobile phone camera doesn't set a specific sequence to the visitor's movement in the exhibition. Phone cameras do not set out paths for the visitor to follow in the same way that exercise pamphlets do. The mobile phone does not indicate a path through the exhibition, but rather a drifting, but also somewhat abrupt and random movement. Stop, go. Look, go. The path through the exhibition becomes a route between photographic moments. This mode of visiting is governed by the flighty eye, which Serres points out is always on the move, it perceives one countryside and forgets the other (1985/2008:267). The primary principle in Serres' philosophy of mingled bodies is that of mixture, as mentioned in the theoretical chapter, the senses are understood as being in continuous mingle. Serres accounts for each of the senses in relation to this principle of mingle. The visual sense is explored as the act of visiting a landscape. The capacity to shift, to deflect, to move from one direction to another is accentuated in the sense of vision which Serres unfolds as *visit*. When Serres writes of vision, he does so by writing about visiting, about being on the move and passing through a landscape. Vision is a sense of displacement. We move in order to see, or to see better. Vision is used to explore relocation, rips in consciousness and direction. In photography the visitor is flighty, on the move, in abrupt wavering comings and goings. Passing through the exhibition with the mobile camera with regular stops in front of exhibited objects is a way of covering the ground, of passing through the terrain and doing it.

Three minutes after entering the first floor of the exhibition, a fourth grader says to her classmate: "I've taken pictures of the different things now."

"Me too – I've taken pictures of almost everything."

Mobile phone cameras help children enact quick and efficient encounters

with the exhibition. The association is rapid, exercised as a series of clicks with a phone. Taking a picture of an animal is a way of grasping an animal, and taking pictures of 'almost everything' is a way of performing a whole exhibition floor in three minutes.

Each instance of photography only takes a moment, but it is practiced as an ongoing activity which oscillates between presence and absence. It emerges as recurrent flicker, and it furthermore performs a flickering exhibition, an exhibition which crackles off in glints of energy. The digital images may be contemplated as sparks that shoot off from the glowing centre of the exhibition. From this common point of departure glints of energy shoot off in random directions and now live lives of their own. The exhibition is dispersed.

Relentless photography

There is a dissatisfaction or uneasiness in the act of photography. With exercise pamphlets users can get to completion, a point of achievement: they're finished. They have answered all of the questions, have handed in the pamphlet, and now hold a poster in their hand. This is not the case for the practice of photography. It is never finished. Photography is constantly an option. When it is in action, the phone isn't considered in itself, but when it isn't in action it is - so to speak. It is constantly considered. It is there as a latent awareness. It provides an optic, also when it is not being held up in front of the user. It is there as a consciousness, as an attention and as a potential. The exhibition continuously shows itself as photographic opportunity. When should users stop?

The act becomes a relentless gathering, an optic of looking for pictures, which is not easily dismantled. Children walk through the exhibition with this ever present option of photography. It exists as a partial awareness, as an insistent part of their consciousness. In observations I saw children take their phones out of their pockets and put them back into their pockets very frequently. It is almost as if there is a strong gravitational field stretched out between the mobile camera and the exhibition, forcing the camera out of the pocket and into the hand of the user, again and again. Children carry out incessant photographic activity. They primarily take pictures of animals, but they also take pictures of other things – the screen of a computer, a film which is projected on the wall, each other. In this enactment the obligatory point of passage is the phone, it is the point through which everything must pass in order to exist. When the relationship to the phone is broken this often occurs due to demands made by other people, relatives or museum staff.

A fourth grade class has won a contest on climate changes and is spending the money prize on a visit to Naturama. Almost all of the children have a mobile phone with them, and are eagerly using it as a camera. Images are taken of animals, computer screens, a film which is projected on the wall and of each other

Restricted photography

A fourth grade is on a leisure/school visit to the museum. They have won a money prize in a contest about climate changes which they participated in and they have chosen to spend the money on a trip to Naturama. A big bus has taken them the 40 minute drive to the museum. They have arrived a little before 10, the museum isn't open yet, so they stand outside, waiting. At a glance it looks like everyone has a mobile phone camera and is using it. They spend the waiting time doing a collective pose for photography. They line up, some stand towards the back, others hunch down in front. Click.

When they enter the museum, the children again pose and take pictures of each other. Staff at the front desk tell them that they can find a wardrobe downstairs. They go down there, and after having taken off their jackets, they start their visit to the exhibition on Water. A whale film with a loud rhythmical soundtrack starts just after they have stepped into the exhibition area. Some children are pulled to the screen. They stand in front of the projection on the wall. They take pictures of the film. Other children spread out into the exhibition. They take pictures of the exhibited animals.

Shortly after their entry, a guide calls out their school name in a high voice, competing with the film.

"Red Forest Schoooool. Over here please."

The guide waits for a moment. When the class is gathered she says "You have to stand so you can see me. Because there is going to be another class here as well, so you have to come close, so you can hear what I say. Uhm – I can see that you are walking around taking pictures with your mobile phones, and I have heard that you are going to be here all day, so I thought maybe we could make an agreement that you put them in your pockets while I talk, and then you can go around and take a lot of pictures afterwards, if not it can be a bit difficult to concentrate."

"Well, anyway – my name is Clara. And I am a Nature Guide here, and I am supposed to show you around in here today."

The children are very active with their cameras throughout the whole period of time that I watch them from outside the museum and until this moment, where a guided tour starts. This is the class that asked their teacher if they were allowed to bring their phones on the trip. When the tour starts, the first thing the guide does, before introducing herself, is to tell the children to stop doing the museum in the way which they are engaged in. Stop taking pictures, put away the phones. She justifies this by saying that if the phone isn't put away it can be

difficult to concentrate on listening. The guide enforces a new agency on the children – they are asked to act in accordance with the institutional setup of a tour. This little piece of interaction shows that mobile phone cameras are embedded in social practices which also involve issues of power. The mobile phone camera in this case can be seen to represent the will of the participating children. When they do the exhibition as they want, leisurely, they do it with the mobile phone. When the guide meets them, she asks them (tells them) to stop doing this and subject themselves to her will (fair to say: prior arrangements have been made about the guided tour, so the teachers, and perhaps also the children, have been involved in making this arrangement). Nevertheless, two entities negotiate about the child's attention: the guide and the mobile phone. And the guide has to use a rule to back off the mobile phone.

The mobile phone is disturbing to the guide. The hybrid of the phone and the visitor disturbs the order of a guided tour. Participants on a tour are supposed to be attentive to the words of the guide, they are supposed to be oriented towards the guide. They are not supposed to be looking at their mobile phones, or looking through their mobile phones. This disrupts the performance. The participant on a guided tour is not a child-camera, but a child.

The guide exercises power over the children. She does this with backup from the institutional setup - this is her place, she is informed, she has something to tell the visitors - and with backup from the prior arrangements – an agreement has been made between the museum and the class/teachers about a guided tour. In this interaction, a right way and a wrong way of doing the exhibition is established. The right way is the guided tour, the wrong way, in this moment, is photography. The wrong way is not rendered wrong for ever, it is permitted, *later*. The children's spontaneous way of encountering the exhibition is pushed aside; the child's body is placed in the social situation of the guided tour. The institutional setup exerts a strong force on the child. It exerts a power which the child cannot free him/herself from. Instead of exercising hybridized seeing, the child is asked to participate as ears. Listen. The mobile phone camera becomes a zone of conflict, oppression. It becomes the intersection between sender oriented communication where the children are seen as receivers, their role is to receive the important message which is sent from the museum/guide, and receiver oriented communication where the experience of the user/visitors is central (Hooper-Greenhill 1995). In this example, the guided tour as a medium, prioritizes the perspective of the sender over the perspective of the receiver. Children are pushed out of hybrid forms into the shape of ears.

The mobile phone camera takes away children's attention from the guided situation. Awareness is shifted with the mobile phone camera, and apparently the camera is more powerful than the spoken word of the guide. It disturbs the guide's mediation of the exhibition. It exercises a stronger pull on the visitor than the guide does. Another guide explains that it is quite disturbing to the tour-situation if the children take pictures.

"Well, it can be quite disturbing if all of them take pictures in all directions, while you are trying to tell them something. In that situation it is kind of nice if they don't use them. But when they walk around on their own afterwards, or if you say, it is OK for you to take pictures now, and then you can put them away again in a moment, then you can control it a little. But if they are just allowed to have it out – I tried it you know – with a class, because I thought, well they are ready *all* the time, so I thought, *OK*, and then I let them do it, but they... focus went off the tour, because then they just had to, they didn't hear, it was obvious that they just looked through that thing and were immersed in it, and I just talked like some sort of background music, and they didn't listen, and so you have to make some breaks, so I thought, I wanted to try it out, to see if they could both hear and do that thing, but they couldn't concentrate on it. Actually, I think we would do that as well, if we were taking a picture," the guide shows zoom and focus movements with her hands in front of her face, and continues, "then you instantly think of composition…"

A bubble of seclusion

Schroyen et al. (2007) mention the metaphor of 'the bubble'; that visitors are in a bubble which makes it difficult for them to interact with fellow visitors, as a problematic aspect of audio tours which also applies for PDA-based museum visits. Children who are engaged in photography also appear to be in a bubble, this is part of the report which the Nature Guide makes; visitors cannot participate in other activities while engaged in their phone cameras. Mobile phone cameras steal visitors. They move visitors focus from face to face human encounters and absorb them into phones instead. Taking a picture is an act which occurs between a phone camera and a human eye, and in the museum encounters fellow visitors are not even included as objects of photography as they are in performances of tourist photography (Larsen 2004). A mobile phone space is a secluded space. From the perspective of the photographer this does not seem to be a problem, but it does seem to be a problem for the people who loose visitors: Nature Guides. On the other hand photography and showing images also have social functions,

both in the present and in the future. Children cooperate about photography, tell each other what they have taken pictures of, show each other pictures, and plan to show pictures to relatives in the future.

Gathering. Mobile phone camera hybrid action

Hybrid constellations between visitors and mobile phone cameras perform the exhibition as a gathering of visually appealing objects. The mobile phone camera is an optic which allows the enactment of personal taste, aesthetic judgment and relations of size and proximity. The children perform the exhibited animals aesthetically. They find the animals sweet, beautiful and impressive, and mark this by taking a picture. The exhibition is made present as an aesthetic landscape, as a place for photography, a place for gazing at and gathering beauty. It is also made present as a landscape of surfaces, of visual appearances. It is a highly aestheticized landscape. The animals are enacted as beautiful models posing on a catwalk.

Photography is performed with an orientation towards the present. It is an activity which is about taking the animals in, in the present, through the camera. Future showing of pictures is not central in children's motivation, but it is an envisioned aspect of their photographic practice.

Children are absorbed by their mobile cameras. Mobile camera visitors move in their own world, bring part of their everyday life into the exhibition and move around in the exhibition with a hybrid awareness, an awareness which is constantly oriented towards photography. Where pamphlet activity has a beginning and an end, mobile camera activity is an ongoing event. Doing photography is a way of seeing. Staff has to tell visitors not to take pictures in situations such as a guided tour. If not, the mobile inevitably crawls out of pockets and into hands, pushing for photography.

8
Animal costumes at the museum

This chapter focuses on the association of animal costumes, visitors and the exhibition. The association emerges through negotiations about the desired space inside animal costumes, notably the polar bear. Once bodies and costumes are fitted, animal children flesh their way through the exhibition. A mode of visiting emerges which is governed by animalistic friction. The exhibition becomes a sensuous and carnal place, and the visitor is transformed into a wild animal, which sadly, in the end, is caught and confined.

Do you want to be… an unseen owl, a wild boar, an icy polar bear, a hopping hare, a brumming bear? Twelve costumes hang on a bar, and a wall-mounted sign invites children to get dressed in animal costumes. The sign also asks *Please hang the clothes after use – thank you.* Children often give up on putting the clothes back on hangers. The costumes are left on the floor, an un-orderly pile the testimony of their use.

The costumes consist of one or two parts. The head and upper body are sown together, and for some suits, so are the legs, others have separate pants. The outfits close with Velcro. The costumes are found in one size which fits pre-school and early primary school children. All of the costumes are of animals which are found in the exhibition and it is possible to dress up as polar bear, brown bear, porcupine, badger, and hare, among others.

The museum provides the costumes and maintains them. A recurrent task which Nature Guides carry out several times a day is to hang the costumes. Every day when the museum opens, costumes hang in an orderly manner for children to come and choose from. Costumes are regularly washed, torn costumes are mended and new costumes are sown when costumes are worn out. The costumes are taken care of by the museum, but they are not embedded in institutional didactics. The costumes are not involved in organized activities or tours, they

are not mentioned by staff at the entrance, nor are they enforced by prizes in the form of a poster. When children come across the animal costumes, they do so randomly, on their way through the museum. The animal costumes are found on Land in an appendix to the main exhibition area called The Touch Room. Two areas of the exhibition are especially used by children wearing animal costumes. The main part of the exhibition where children use staircases and hallways as a landscape for running in, and an area called The Bear Cave in The Touch Room.

Animal costumes are used both by families on leisure visits and in situations of free play during school or kindergarten visits. On institutional visits, the duties of doing the museum with exercise pamphlets and guided tours often set a limit to the children's play in animal costumes. The costumes are given the time that is left over from exercise pamphlets and guided tours. Frequently children on institutional visits do not have time to get dressed in animal costumes. An animal costume mode of visiting is not favoured in the same way as an exercise pamphlet mode of visiting, animal costumes are not an integral part of the visitors body, as mobile phone cameras are, and for this reason, the association between children and animal costumes is somewhat squeezed. It emerges randomly, but nevertheless the association emerges. Children get dressed up.

Establishing a relation to the costume

The relation between children and animal costumes is established in cooperation with other visitors. Children start putting on the costumes together, a sister dresses up her brother, older boys together play around with the costumes, or perhaps an adult suggests 'put this on and I'll take a picture of you'. Putting on the costume involves negotiation of both material and social character. Costumes may be difficult to get on, and somebody else may want the same costume as you do.

A group of kindergarteners are in The Touch Room.

"Why can't I wear the polar bear?" asks Lykke. One of the kindergarten teachers, Rose, picks up a wolf skin and puts it around her head like a scarf.

"How do you do this, do you think?" she says.

"I want to wear it now," Lykke says. Rose looks at Viktor, who is struggling with the polar bear costume.

"Viktor have you tried on that one? Then I think Lykke should be allowed to try it on, all right?" says Rose and instructs Viktor how to get into the costume.

"You have to sit down into it, as if it were a snowsuit."

A third kindergarten child comes over.

"Rose, help me out with these mittens."

"No." says Viktor and starts crying. Rose looks at him, "No, but just a second, I have to help out here." Rose helps Viktor get into the polar bear costume while she says, "Now you can wear it for two minutes, and then it is Lykke's turn, ok." While they are struggling with the costume, Rose again says, "and afterwards Lykke has to be allowed to borrow it." Viktor doesn't say anything. He is fighting to get into the costume and is becoming more and more flustered.

"Let's do one thing at a time," says Rose, helping him out.

"Oops. Isn't it like this?

"No, you've turned it wrong. That's because you were so busy quarreling, so you've gotten the bottom to the head instead. I think we will start over. This, this is up."

"I am going to be a polar bear after Viktor," Lykke says to another child who joins the scene.

"And lift up your leg," Rose instructs Viktor.

"I am going to be a polar bear after Viktor," Lykke says again.

"Oops," Rose says and then the mission is accomplished. Viktor is dressed in the costume. Rose says, "And now I am going to keep time, and then no complaints when it is Lykke's turn. OK?"

"We have to take turns, because we only have one suit," Rose says.

"And it is warm to wear, isn't it?

"OK. Let's take time. Two minutes."

The inside of the polar bear suit is a desired space to be in and time is used to set the limit for this bodily being. The above excerpt shows both social and material negotiation. Social negotiation goes on about whose turn it is to wear the specific, desired polar bear costume. Material negotiation goes on between the boy and the animal costume. He can't get it on. The girl is pressuring him to give up the costume, and he hasn't even gotten it on yet. The adult helps out in getting the fabric to behave properly. Head to head and bottom to bottom.

A common focus for visitors

The act of getting dressed is a social activity. It is an activity where children are helped out by others. The kindergarteners are helped out by their accompanying teachers. So are the second graders. Johannes (9) is helped out by Ann (12) and Sara (13).

Johannes steps out of suit two. Ann directs him into a third costume.

"Now I am going to be an elk as well," says Johannes.

"Woawoo", he says, about to fall.

"Johannes, concentrate," says cousin Sara.

"These are my hooves, these are my hooves," says Johannes. His sister puts the headgear on him and closes the Velcro. The boy gets down on all four, crawls away. Ann hangs the animal costumes back on hangers.

The animal costume does not provide the same possibility as the exercise pamphlet for joint family activity. There are no animal costumes for older siblings or for parents. Instead combining the child and the costume become a common activity – the child is dressed up, relatives work on helping the child undergo the transformation into an Elk. All three children are involved in the act of dressing up, and in this sense the costumes provide something to do together. The users' attention is directed at the animal costume, it is an object which they work on. The animal costume prescribes the actions which are necessary for putting on the costume – for establishing the desired link between the user's body and the costume. Johannes has cooperated through two costumes, and now on the third is becoming a little too playful for the girls' liking, so they beg of him that he concentrates on their common task.

The materiality of the animal costumes is something which elicits quite a lot of interaction between children and adults – putting them on, getting the right head matched with the right body and whether the suit will fit or not. The costumes fit some children, other children are too large, in this way children are enacted in body sizes by animal costumes. A limited space is available in the costume, and the fit between the child and the costume becomes crucial, and a source of problems for some children. The size of the costume defines who is allowed to enact the exhibition through play.

Children negotiate these boundaries. The costume is fitted around bodies that are too big, for example: "I think this is a polar bear," a second grader says.

"I think this one is just a little too small for you," says the teacher and nevertheless helps the polar bear put on its skin and head gear. The space inside of the costume is attempted stretched. Older children with large bodies also try to put on costumes and rip them while doing so.

"They are often torn by larger kids using them. I wish the larger kids would just wear the arms, and let the rest of the body hang down the back, but they don't. The costumes are made for kids up to 6 or 7, but the older ones wear them as well when they are here with their school. They don't do it, when they are here with their parents," tells Vera, a Nature Guide.

"The large kids, they PRESS themselves into them," says another Nature Guide, Flora, while she vividly gesticulates somebody trying to get into something

which is much too small, "and they reach them to their knees, but they just HAVE to wear them, they think it is so cool. - They get into another character. They still play, even though they are older."

Large children also like to get dressed in the costumes and therefore try to negotiate with the fixed materiality of the costume. They press their bodies into the space of the costume with the result that costumes are torn and have to be mended. When older boys – and it is boys - wear the animal costumes, they are self-aware in a way that the smaller children are not. The boys simultaneously enact two bodily realities, they are both being animal and being me, being animal. When younger children wear the costumes, they are 'just' being animals.

Being animal

The animal costumes allow the child a variegated form of being. The physiological border between the child and the outer world is changed. The child gets a new texture, new skin. This new quality in the boundary between the child and the museum creates new identities: I *am* an animal.

"There." A boy is seated on the floor, being dressed up by one of the teachers. The boy goes off towards the bear cave. On the way he meets another one of his teachers. He stops in front of her and grabs one of the spines on top of his head.

"What kind of a one are you?" she asks.

"-saurus," he replies.

"Are you a kind of dinosaur?"

"Yeah," the boy says. The teacher bends down towards him, they are at eye level, facing each other.

"I hope you aren't a dangerous one, are you a little dangerous?"

"Yeah, dinosaurs are."

"OK, I'll watch out then."

The dinosaur walks up the stairs.

This child is wearing a porcupine costume. With his hands he directs the adult's attention to his new bodily form. He asks the adult to see him like this, to see him as he is in this animal form, and in this encounter he is provided the opportunity to define himself. When he is asked by an attentive adult what he is, he defines himself as a dinosaur. The woman does not determine his existence for him. She does not say 'oh – you are a porcupine', she says 'what are you?' He is a dinosaur.

Friction

When the user steps into the animal costume, he or she also steps into a new state of being. The costume inspires the visitor to be *animal*. Animal costumes unleash animal performances. The children utter guttural sounds. They snarl, growl, scratch and paw at fellow visitors.

Two animals come out of the bear cave. A polar bear and a brown bear. They walk around a little. Then they see someone they know on top of the bear cave.

"AAAArgh," says the brown bear and dashes for the stairs.

"AAAARGH!!" he says while walking up the stairs. He reaches the platform on top of the bear cave.

"AAAARGH!!" he says and attacks the first adult he comes across.

"AAAARGH!!" he says again, and attacks the second adult.

Animal children move towards people they know – sometimes just to be seen, but most often in order to have a bodily encounter. The animal costumes inspire bodily interaction – and frequently this interaction entails hard, physical meetings. The children scratch, push, and use horns to butt at each other and at their fellow visitors. The boundary between You and I is sought out in a physical, frictional sense. The costume permits the rehearsal of a physical body, not in solitary movement, but as the friction which emerges from the meeting with another's body. It is a non-verbal, or almost non-verbal, interaction. Not very much verbalization takes place, but when words are used, they express three things: animal sounds, what the child is, and what others should do. While the children are dressed up, their interaction is more bodily, than it is verbal. It is an exchange of physical, bodily energy, of feeling, not in a limited touch of the hand but in a full-blown collision. Body mass against body mass.

An adult who plays along

The previous empirical excerpt is from observations of a kindergarten. The two adults who are attacked by the polar bear and the brown bear are the children's teachers. And these adults play along. Following these two first attacks one of them, the adult, Rose, is helping another child get dressed. While doing this she is under continuous attack.

She playfully says, "Ouch, ouch, ouch, you are scratching me", and later, "Ouch, ouch, ouch, I want to go home to my Mommy, they scratch, these animals, Oh, Oh" – "or maybe I will have to go down there and put on the wolves clothes and then I will come after you!" Animal costumes permit a specific way of acting – also for adults. Rose says that if she went down and put on the wolf skin,

she would be able to attack the children back. Apparently she can't do that right now – without the animal costume.

Nature Guide Flora says, "They can step out of themselves and into another character, into another world, where it is permitted to be somebody else than who you are, and… well you can play that you are an animal, and you can… you don't have to think about yourself, you can just play. I don't know why it is fun to dress up, but it is probably about it being possible to change identity and finding it a lot of fun, and you can crawl around and stuff like that…"

The animal costume makes it possible to enter another kind of space and another kind of reality than the one visitors are in when dressed as themselves. The animal costumes inspire the children to embody and enact the perspective of something different, of something else, they undergo metamorphosis, are transformed. When the children wear animal costumes, they become animals. Their bodies fill out the empty space inside an animal costume and they enter animal reality, where appropriate actions are to growl, snarl and attack.

Animal child embodies partial identities, is a hybrid, as Haraway writes, "a creature of social reality as well as a creature of fiction" (1991: 149). It embodies multiplicity, it is both child and animal, imaginary and real. Hybrid associations between children and costumes embody the idea of something being more than one and less than many. This is an enactment of distributed identity.

Nature Guide Vera says, "I think it is about getting another identity, trying it out. - I think some of them have a favourite animal and it is about, - now I am, now *finally* I am a polar bear. And also, a lot of them think it is fun to try being different things, so they go through all of the costumes."

Skin

The animal mode of visiting in a very visible way enacts what Serres calls a body on the move. The child's body reforms itself, makes itself into the form of an animal, and not only the *form*, but the being of an animal, where consciousness and body exchange in the variegated bodily multiplicity of a hybrid. Serres gives considerable importance to the sense of touch, to the skin. Touch is the sense that Serres engages with first in his philosophy of mingled bodies, and it is the sense which he gives primary importance: The skin encompasses all the other sense organs.

Serres couples the skin with texture, drapery, cosmetics and appearance.

"Nothing goes as deep as decoration, nothing goes further than the skin, ornamentation is as vast as the world. Cosmos and cosmetics, appearance and

essence have the same origin." (Serres 1985/2008: 32). Serres points out that cosmos and cosmetics are etymologically related, and rightly so, he says. The order of the world is an order of appearance. The order of appearance is the order of the world. Cosmetics, surface, paint, mask and veil are not conceived of in a negative way, as shallow or superficial.[1] For Serres the skin signifies a way of being in the middle of the world, as opposed to standing in front of it. The world and the body touch in the skin; this is where their common border is defined. The skin is the primary meeting point, it is where the tissue of the world and the tissue of the person mingle.

The animal costume recomposes the child's body. It makes the child appear differently. The costume adds a new bodily layer to the visitor. The fur becomes the meeting place between the child and the museum. Children are adorned, draped, veiled. They can feel fur stroke against a cheek, feel their new skin. It makes them appear and disappear. The child disappears, dissolves, shimmers into animal form. The whole body is involved, the entire being of the child becomes animal. While dressed as animal the child *is* animal. The child senses what it is like to be animal. The child senses the world as animal, the child touches the world in the way an animal would touch the world. The costume and the child are no longer costume and child, they mingle, flow together, are fused in animal action. The child is delivered to being animal, is born as animal, halfcaste, hybrid.

Animal costumes bring with them animal optics. Depending on the kind of costume the child wears he or she may look with the eyes of a polar bear, a hare or a porcupine, but animal costumes also demonstrate a limit to the concept of *vision* in grasping what goes on in the exhibition performances. Vision is not enough to explore what the animal costume provides to the visitor. The animal costume provides much more than vision, it provides a whole new *body*.

Animal costumes are an all-encompassing spatiality: appearances which children are folded into and out of. When these hybrid associations emerge a characteristic kind of kinestethic, sensory and bodily reality is enacted which bursts of energy.

The merger of child and costume show a visitor with fluid and metamorphic qualities. The user moves into the costume; fills it out with his/her body. Once this relation is established, the user with the animal costume is an entity that moves

1 For an interesting similar point see Miller (2010). Based on ethnographic work in Trinidad Miller draws attention to another ontology than that of surface as superficial and depth as desirable, which he sees as dominating in Western and European culture.

together. The child's activity is not directed towards the costume, it is directed towards something else; the outer world, the play mates, a sensed physical reality and an imagined place. The costume stabilizes a certain enactment of the exhibition and a characteristic mode of visiting. Costumes do not prescribe a temporal or spatial order as exercise pamphlets do, but they set a mode. The costumes orient the visitors' action. When they are worn, they inspire to movements and imaginations which are 'more' or 'other' than that which the children would be able to do, without them. The costume not only does something to the body of the child, but also does something to the mind of the child, and reciprocally the bodily transformation is inseparable from the child's imagination.

Playing nature

The costumes inspire the children to use their imaginations and bodies in performing what they perceive as 'nature' and animal realities. Children from a second grade play a game which is about chasing each other and playing dead.

Polar bear and brown bear make animal sounds. They are on their hands and knees, fighting, getting up on their knees once in a while and using their paws to lunge out for the other. The brown bear presses the head of the polar bear down, gently but firmly. The polar bear whimpers, "iiii, iii, aiii". Brown bear says scratchy sounds, "ritsj, ritsj, ritsj", and a deep guttural sound.

The animal costume mediates carnal instincts, and a fleshy wild body. With their own interest and imagination as point of departure the children are creatively engaged in meetings with nature.

"You can play while you wear them. You can play that you are the animal," says the brown bear and the polar bear supplements, "It is exciting to play animal."

"Why is it fun to play that you are the animal?"

"Because it is exciting," says the polar bear.

"You can get different instincts as well," explains the brown bear.

"You can play different instincts?" The brown bear confirms and says it again.

"You can play different things."

"We just think it is fun," says the polar bear and the brown bear fills in

"Because you can run after each other and pretend that–". The brown bear doesn't get to complete the sentence, the polar bear takes over, "I'm really good at playing dead so… that's a lot of fun."

"Then what, you lie there playing dead, and...?"

"Then we count to 10 and you're alive again," the polar bear explains.

"It is about nature, about how nature is. Because you often die in nature."

The animal costumes provide the possibility of playing what the child calls *different instincts*, to play what the children perceive nature to be. They attack each other, fight, kill each other, and come back to life. These animal realities as they are performed by the children consist of fighting, killing, dying and coming alive again, but also of dwelling, being and belonging. With animal costumes the children explore enactments where the content is not prescribed in advance. Animal costumes permit considerable interpretive flexibility, they can be used to enact what the child wants (within a reasonable spectrum of options). A porcupine can be a dinosaur, and the costumes can be used for playing dead or alive. The content of the performance is not prescribed, nor is it embedded in an educational goal of knowledge transmission. Performances are not staged with the goal of reproducing biological facts and children are not explicitly subjected to education, but are provided explorative space. Children make meaning out of the exhibition by expressing bodily and imagined realities. This is an example of the distinction Hein makes between educational intent and learning – as mentioned in chapter three. Hein's point is that an exhibition should be understood, not as a place for *teaching*, but as a place for *learning*, a place where visitors actively seek out meaning in ways which are appropriate for them. The focus on the child's own production of meaning is related to a receiver oriented model of communication where the content of what is communicated is flexible, and a central orientation is the receiver's emotions and experiences (Drotner 2006).

When the children put on the costumes, they playfully and creatively engage in the museum theme. It is a mode of visiting where the content is very loosely prescribed; and actually *inspired* is a more appropriate word. The setting and the costumes set a theme for the play activities; children do not play superheroes or princesses when they wear costumes, but the specific content is developed by the playing children, by use of imagination and social negotiation.

Social negotiation and coordinating play

Children more or less automatically engage in some sort of animal action when they wear costumes, and in family visiting situations it stays with that, whereas on institutional visits where more children, who know each other, are together, structured play activities emerge.

The Nature Guide, Flora, says: "The smaller kids, they go all the way, they step into the character and become a polar bear when they put on the costume – they crawl around playing. I saw a kindergarten where all of the costumes were occupied, and they were actually playing a game. That they were the animals and

they were inside that bear cave, and then up and down and in and out and *you are that* and *you are that*, and they actually were doing, well, role playing, right? And then you also get parents who think the kids should put on the costume in order to be photographed, and then they take it off again." She chuckles.

Structured play activities emerge when more children are gathered together, as they are when they visit with their kindergarten or school. The children talk about the course of their play; who is the leader of the gang, who should do what and when. The play activities that children engage in are negotiated, choreographed and regulated along the way.

Brown bear and polar bear fight. The brown bear has overtaken, is making scratching sounds and is scratching polar bear who lies down on its back. Brown bear continues scratching. Polar bear gets up and does a contra, attacks brown bear who falls backwards.

"You're not supposed to play that you are hitting each other, you are supposed to be scratching each other," says Louise (9) to her playing classmates. She is struggling to get into her costume.

"And I'm not in right now. Argh, what is this. A pair of paws."

She sees some classmates come up the stairs.

"Here comes the elk. Here come the elk and the hare," says Louise to the polar bear and the brown bear.

"I am the one in charge of the herd," says elk boy when he arrives at the top of the stairs. The girl who also just came up the stairs does not agree.

"No, because I am a hare," she says. Elk boy repeats what he said before.

"I am the one in charge of the herd."

The activity of playing while wearing animal costumes is a social activity, with social negotiation. Rules, roles and power are negotiated. This negotiation takes place in action as a layer of communication which exists parallel with the bodily and imaginative activities of being bears, elks, and hares.

Movement in the exhibition

A boy wearing an orange fur fox head runs across Land. He spurts past the wild boar, the badger, the elk and the brown bear. He dashes for the stairs, the fur down his back swings from side to side as he at an infernal pace climbs the steps. With animal costumes the exhibition becomes a sensuous and carnal place. The exhibition embodies the theme of nature, and the children engage with this theme as it fits in with their activity of play. The exhibition becomes the site for their action, it becomes their earth and sky. It is used as a landscape for movement.

When children wear animal costumes they posses the exhibition space. They make it into a territory of hunting down each other. The exhibition presents itself as spatial impulses; it is a landscape with a topography for movement, it goes up and down. The stairs assume the form of hills that one can run up, and winding paths that one can run down. The exhibition is experienced as a sensuous landscape, where eyes, ears and skin are engaged and in movement, it is experienced kinesthetically.

The exhibition presents itself as flows of sound and light. The audio-visual atmosphere continually changes with surprises in sound and light. The children sense the 'natural' drama of the earth and sky, they are embedded in it and it becomes part of their imaginary world. The audiovisual show does not set temporal boundaries for the children's play, but it sets the scene in the exhibition with changes in light, occasional thunder and rain, and the sound of animals which are out during night or day. The exhibition acts as the setting for specific kinds of action. The exhibited animals are part of the fantasy and so are co-visitors.

The children perform temporal cycles. They repetitively perform cycles of living, dying, and coming alive again, but also the cycle of being awake, going to sleep, sleeping, and waking up again. These cycles probably cannot in any simple way be attributed to the cyclical pattern of the museum's multi-media show, which over an hour and a half plays a 24 hour cycle of day and night, but they nevertheless at least in principle are related. Both a linear and a cyclical temporality is enacted when animal child is in action. Animal children also enact the temporality of the hunt: chase, attack, kill and death. This linear temporality is built into the circular temporality of life, death and resurrection.

The animal costumes bring with them an imaginary world, a new layer of reality which contextualizes and gives meaning to the exhibition. The exhibition is performed as co-constitutive of an imaginary play activity. A performance unfolds – not a dramatic performance in the sense of a uni-linear narrative with a plot, a beginning and an end, but rather an improvisational performance. This performance is fostered by embodying and enacting animal perspectives. The performance consists of expression, but it is a non-verbal, guttural, animal voice enacted by a playful and creative child. Each animal costume is an animal. It brings with it an animal identity. It has a character inscribed in it. Not a script, but a character – which the child may improvise in and into. The animal costume is a figure of recognition – the child recognizes the fox, and chooses; I want to be a fox. Or perhaps, if most of the costumes are taken; I don't know what this blackish-grey one is, but this is who I will be in it. Grrrr.

(Re-)enactment activities where museum visitors participate in performing aspects of a museum theme, as briefly mentioned in the literature review in chapter three in relation to Tyson's article (2008) , and which also are used in other museums (Bærenholdt & Haldrup 2004), emerge here as spontaneous acts. This is not staged role-playing, but more has the character of impro-theatre. The performance is parallel to reenactment activities and organized role-playing in the sense that realities are enacted with help from props. These realities are both imagined and factual, fictional and scientific. They take the museum as their point of departure, the content of the imagined reality is inspired by natural history, and simultaneously content is created by the visitor's imagination, by the capacity to invent, associate, make up, translate and to be anyone: "animal, element, stone or wind," as Serres writes (1982/1995 : 35).

This mode of visiting relates to the playful engagement which Scroyen et al. and Kahr-Højland seek to obtain via digital mediation, but it emerges without digital media. The advantages which are mentioned as attainable with digital media: augmented exhibition realities and multiple coexisting narratives, emerge spontaneously in children's play activities. This interaction is not product-oriented. It is not directed at an object in the making, such as the exercise pamphlet, or mediated by a tool, such as the mobile phone. This interaction is oriented towards itself. The process is the product. The output of play is play.

Small children play when they get the chance. Inspired by Serres we can say that the hubbub of playtime precedes the order of standing in rows at the classroom door (1993/1995: 91f.). If they are given the chance, children will do what they do every day; play, and this play associates to the museum theme. If and when they have time to play, if there are enough costumes, and if these fit, the children will engage in the hubbub of playtime - and the rich museum environment is an inspiring place to play in.

Disturbances

Animal children enact nature. With this enactment, they disturb other patterns of action, other modes of visiting: for example visitors who walk around quietly and look at exhibited objects and talk about what they see. These modes of visiting literally bump into each other. Ouch! Oops, sorry. Animal costumes mediate conflict. People find the behaviour of animal children annoying. Costumes make it more difficult for teachers and museum staff to control children's behaviour. Enactments collide and costumes create tension between different modes of museum visiting. Because animal costume actions disturb other visitors, they

are only ambiguously welcome at the museum. When animal children roam the museum it is governed by 'hazard and chance', as Serres calls it (1993/1995: 92). Animal children enact turbulence and disorder. This has been tackled by the introduction of The Bear Cave.[2] The Bear Cave is a large two story playhouse which was purchased as an attempt at locating animal performances to one specific area of the museum, and the attempt was successful. Children no longer as frequently move out of The Touch Room. Children first get dressed up and then play around in and by the cave. A link is established between the animal costume and the cave; The Bear Cave pulls at the animal children, it takes them in and allows them a place to live out animal realities.

"They wear the costume and go over there to the Bear Cave," says Vera, but notes that some kids also want to wear costumes while they walk around in the exhibition: "Some prefer not to take off the clothes even though they leave this space. And that is quite alright."

Children still like to wear animal costumes in the exhibition, but The Bear Cave has influenced where activities of playing animal primarily take place. The animal costumes and cave locate children to a specific area of the museum, adjacent to the permanent exhibition. This area may be described as a child container. It is an area which keeps animal children from playing around in other areas of the museum. The museum's goal of keeping the children out of the way of other visitor's has successfully been delegated. The bear is caught in the confine, and thus the exhibition changes form, and is translated into a three by three metre play house cave. Animal children are not in the actual exhibition, they are in the appendix area, which in these specific enactments no longer is an appendix, but is primary. The exhibition becomes an appendix to The Bear Cave. This is what the children see, this is where they live.

Gathering. Animal costume hybrid action

The association between the visitor and the animal costume is like drapery, the costume is layered on top of the visitor. In the process of getting the costume on, the costume is a collective fix-point and center of attention. The visitors work together on it. When the costume is on this changes, then the costume is no longer in focus, it just acts; mediates animal enactments. When animal children are in flows of play a bodily space and an imaginative space overlap. There is

2 The Bear Cave was purchased while I was abroad for three months, and therefore was away from my fieldwork. When I came back, the addition had been made.

no distinction between the animal costume and the child, they are related. The entire user is wrapped into the portable object. They are one.

The flow of action which is performed by animal children is about friction and what a second grader calls 'natural instinct'. Animal children bump into each other and into other visitors. With animal costumes the exhibition becomes a site of conflict – not only because of the wild animals which roam it, but also because of the effect these roaming animals have on other visitors. The animal clad children disturb other visitors. As a result of this an area adjacent to the primary exhibition is made into a child container with the structure of the Bear Cave being the magnetic element that pulls animal children in. The child is contained in the costume and these two are then contained in the Bear Cave, deposited at the outskirts of civilization. They are confined nature.

In literature the confession genre is an autobiography, real or fictitious, which tells of intimate details of a life. In social science method, the confessional tale is a genre which typically is used to reflect on how a fieldworker has experienced fieldwork (Van Maanen 1988:75). The following tale relates to the confessional genre, but the employed perspective is not that of the researcher, but that of a portable object. It is a confession from museum life.

Confessions of an action addict

When I am on the move I'm in control of everything. This is pure existence. The path stretches out in front of me in a straight, white line. Air gushes past. Blurry patches of unimportance are thrown behind me. The line I follow, the white centre, pulls at me, points forward, forever forward. I'm on a white cloud. I am a speed junkie, an adrenalin addict. I'm in it for the action. My life is in the fast lane.

When I'm not on the move, I sit stone-dead. Quiet. No movement on my face, no sign of life on my body, just recurrent, weary, dreary, lengthy lapses of nothingness, empty moments of everyday life. I sit around, waiting. I wait for time to pass, wait for another afternoon of nothingness to walk across my color printed face.

I hold so much life and then also none. Not being on the move is not performing. Not performing is death. When I am not seen, I am nothing.

My world is a struggle for existence. I use my sharp elbows to push my way forwards. Everything accessible will be mobilized so I can look good, so I can seem attractive, so I can catch the eye of power, bring myself into the nucleus.

If I wanted to be fair, I would say that I am enforced by others. But I am not fair. I'm the mean, lean, winning machine. My world does not hold friendship. I have to be sharp, to the point. I instrumentally cut off useless relations. I suck out what anyone can contribute with and I don't say thank you. I use the words of others with no hesitation, no citation and no gratitude. I am in constant competition for the spotlight.

Power may shift, so easily, so quickly, so rapidly. Action may shift at the wink of an eye. In the split of a moment I am rendered from centre to periphery.

You wouldn't believe how difficult it can be. They stand around for ages, negotiating. They quarrel, bite at each other, steal each other's pens and in a multitude of other ways obstruct action. My eyes dart from one to another, I just hang on the best I can, attached like a leech. I wait.

Impatience is not a luxury I can allow myself to indulge in. But oh, how I dream of the next intense moment where I again will feel the wind in my hair.

I am powerless.

Nervous. Jittery. I sit, again, and stare out into blank nothingness.

I wait forever. Always ready.

My world holds rivalry.

It is a hard fight for power.

My rivals inhabit other voids, other empty spaces. Sometimes I hear them. In a certain area of this place where I roam, the air again and again is broken by loud, moaning voices. A surreal cacophony of animal sounds is sent off from a disorderly heap of fake fur. Begging takes over where the growling stops. Pleas for salvation are uttered from the pile. Watery and huge primate cub eyes appeal to be rescued from vacant chunks of unused material. Sometimes, the animal cacophony is accompanied by a voice sounding from deep down in the tight pocket of a pair of jeans. It is a whiney voice, digital, bleepy, insistent, incessantly trying to draw attention to itself, hoping to be rescued from the threatening lumps of fluff it is forced to neighbor.

We are a choir of muffled voices, collectively rendered to voids of non-existence. We sit around in hard realities of waiting and longing, longing for that hand, longing for that breath of air. The only consolation we have is in the conviction that the other's chance for action is as arbitrary, as unpredictable as one's own. Action is in a flux, provisional, ever changing. We lurk around in our abundant materialities, we sit in folds, crevices and small dark spaces. We linger, desperate for action, desperate for the eyes that will see us, the hand that will pick us up, lift us up and in that same movement lift us out of nothing and into being. Everything changes in the intensity of being catapulted out of a void. Sucked into action I undergo the most magnificent transformation. I am breathed to life, animated. My body is inflated in action, it grows and grows, like a balloon. Magnified immensely by a breath of air I'm on the top of the world. I'm on a white cloud. I'm on the move.

9
Mediated modes of visiting

This chapter juxtaposes the three characteristic modes of visiting which emerge when portable objects, visitors and the exhibition are associated, and shows that portable objects are both strong and weak. The exhibition and visitors are translated in accordance with portable objects, but the association of portable objects and visitors is heavily under the influence of various heterogeneous forces, some more friendly than others.

Characteristic patterns of action emerge when portable objects, visitors and the exhibition are associated. The subject matter of natural history is enacted in ways which closely connect to the portable object in use. The portable objects perform variations over the museum theme. With exercise pamphlets emerges a scholastic, inscriptional enactment where the exhibition is a site for finding answers and the child is a notary. With the mobile camera a photographic enactment takes place. The exhibition presents itself as visual images and the visitor is a photographer engaged in aesthetic understanding. With animal costumes the exhibition is a hunting ground in an imaginary embodied drama carried out by a playing child.

Each portable object mediates a mode of visiting. Three distinct patterns of action emerge which differ in purpose, content, rhythm and movement, and in the characteristics of the hybrid visitor which participates in them and the exhibition space and time which is enacted in them. Each mode of visiting enacts a distinct version of the exhibition and the visitor. The term *mode of visiting* is inspired by Law's concept `modes of ordering´. Modes of ordering are recurring patterns of ordering which emerge in the relations between human and nonhuman entities. Based on this definition, I define *mediated modes of visiting* as recurring patterns of action which emerge in the associations of portable objects, visitors and the exhibition. It is a pleonasm to use both the term mediated and modes of visiting, for modes of visiting are always mediated. I do this, nevertheless, in

order to underline the central role of portable objects, and to highlight that the modes of visiting emerge from the intertwinement of portable objects, visitors and the exhibition. A mode of visiting is a manner of visiting, a way of visiting. A mediated mode of visiting is a manner of visiting which is entangled with a portable object, a mediator.

A mode of visiting is an enactment. It is an order, a pattern of action, a performance, a practice and a reality. As mentioned in the theoretical chapter, chapter four, Law uses various terms for patterns of heterogeneous ordering and reordering (Law 2004 :162). I choose to translate these various terms into modes of visiting and suggest that this term may be coupled with mediated, so the analyzed orders, enactments, performances, practices, patterns of action and realities are mediated modes of visiting.

	Exercise pamphlet	**Mobile phone camera**	**Animal costume**
Produces	Text, inscription	Images	Play, performance
Visitor is	Notary, clerk	Photographer	Animal
Exhibition enacted as	Text, signs, traces A place of answers	Images A place of pictures	Scene, background A place to live
Place	Storage deposit	Fashion show	Nature reserve
Time	Linear time Finite time Progression towards end	Stops in time Repetitive rhythm	Cycles: life-death-life; day-night-day Linear time of the hunt
Optic	Instrumental, utilitarian	Aesthetic, appearance	Animal, imaginative
Action	Moves information. Traverses exhibition floors. Walks at a high pace along a path, purposeful, searching, with pencil and pamphlet in hand. Stops once in a while and writes. Or: is stationary at computer.	Takes pictures. Moves around at a slow pace, occupied, somnambulistic, (present/absent). Stops once in a while, holds arm up, takes picture, looks at image, moves on.	Plays. Crawls, attacks others, scratches, utters guttural sounds. Wild, predatory movement either through exhibition or near Bear Cave. Poses for photography.
Relates to	Inventory, test, school, work	Photo album, leisure, tourism, vacation	Mask, play, carnival, performance, party

Figure 5. Mediated modes of visiting. *Portable objects mediate a characteristic enactment. Three distinct patterns of action emerge which differ in content, rhythm and movement.*

Pamphlet mode of visiting

The activity which is mediated by pamphlets is *information translocation*. The visitor, pamphlet and exhibition come together in moving information from computer databases, signs and exhibited objects to the blank spaces in exercise pamphlets. The activity of solving exercises works through a net of relations. The pamphlet quite literally relates the visitor to certain information deposits and the pamphlet completely depends on these other entities in order to give meaning. A posed question in the pamphlet only makes sense if there is somewhere to retrieve the relevant information from. The pamphlet creates a referential web of associated entities, and the visitor performs this web by walking the path between the entities. The exhibition is transformed into an information container, a container of primarily textual content. The exhibition is enacted as TEXT.

The child is used in order to demonstrate a scientific understanding of biology. In ways that are associated with tests and to school the visitor is enacted as a recipient of knowledge. The child's performance is evaluated, measured and weighed. Pamphlets enact the possibility for error. A fixed set of associations are prescribed by the pamphlet. The child can not improvise answers or make them up. He or she has to make a connection to the singular accounts of animal realities which are provided in databases and in the exhibition. These accounts are not up for negotiation. They do not present themselves as one truth among many. They present themselves as *the* truth about animals. The skills which are solicited are the ability to be fact-oriented and goal-oriented, to understand a task and complete it, to be focused on and guided by purpose and to ignore spontaneous impulses. The exercise pamphlet adds a direct purpose to the visitors' encounter with the exhibition. The output of the encounter is a completed exercise pamphlet which may be exchanged for a poster.

Exercise child is in the linear progressive space-time of problem-solving. Being in this mode of visiting is given temporal priority by teachers and museum staff. Space and time are pulled out straight in front of the visitor as a string to be followed. Exercises are knots along the string. The exercise pamphlet suggests a rhythm of movement and stops to the user. There is an order and sequence to exercises which lead the visitor through specific areas of the museum. It is ensured that visitors encounter all three levels of the museum, and visitors are taken through a series of meetings with exhibited objects which the museum wants to direct visitors' attention to. The exhibition space is performed in accordance with the pamphlet. Information compartments, computer space for example, are accessed as a function of the overall purpose of the exercise pamphlet. Space is a

subjunctive to the pamphlet, it is ordered according to the logic of the pamphlet. The same applies for time, time is measured in the finite duration of the pamphlet. Time here unfolds in a fixed orientation towards an end goal. The rhythm is that of a task to be completed. The duration of the exhibition is the duration of the pamphlet.

The relationship between the visitor and the exhibition is instrumental and utilitarian. Visitors are very selective in the way they look at the exhibition. Children look for entities which will help them complete the exercises in their pamphlets. The exhibition is used to obtain answers, and ultimately to obtain a poster. The utilitarian logic is also reflected in the translation of the museum into a domain of barter: competent performance is exchanged for a prize. The desire to obtain prizes relates the pamphlet mode of visiting to adventure-seeking treasure hunts; looking for wisdom and fortune in unknown lands. It is a mode of visiting which combines the bureaucrat with Indiana Jones. Exercise pamphlets refer to premade classifications and territories which already have been mapped, but they also invite the visitor to engage in discovering these territories anew with the goal of finding treasures. The exercise pamphlet is the map that provides a path through challenging unknown territory.

Mobile camera mode of visiting

With mobile phone cameras, the visitor and the exhibition are associated in acts of photography. This activity emerges as sparks of connection, sparks of energy. The mobile phone camera relates the exhibition to the visitor in the form of glimpses. The rhythm of these glimpses is defined by the visitor's aesthetic judgment. The visitor crafts a new version of the exhibition which centers on what the visitor finds aesthetically pleasing. In this mode of action, visitors are mediated into aesthetically productive subjects and exhibited objects are gathered for their appearance. The relationship may rightly be called superficial. It is about how animals look, not about their names, habitat or what they eat. Doing photography in a non-verbal way assists the child in grasping the museum. The exhibition is transformed into images which the visitor collects out of personal motivation and for personal use. The animals are gathered in by the user, and in this action they are taken out of the museum. They are performed as 'something I was close to' where the site of this sight is of minor importance. Mobile phone cameras create a version of the exhibition as IMAGE. The exhibition is transformed into visually pleasing images.

The process of gathering images is primarily individual, although in a

few cases more than one visitor is engaged in the activity. The skills which are practiced are skills of photography, but these skills are not solicited and they are not evaluated, they are just practiced. Mobile phones do not enact a space of teaching, but may be a space of learning (Hein 1998). There are no rights and wrongs in mobile phone mediated ways of approaching the animals as there is in the pamphlet mediated transmission of preconceived truth about animals. But there are rights and wrongs where the judge is the photographer. There are good pictures and bad pictures. There are pictures which give the right impression, and there are pictures which don't – pictures of fellow classmates that need to be edited out for example. Gathering images is carried out as a process of making meaning in the present, but it also points towards the future. The photos make future conversation possible about the animals and the visit. Mobile phones are a connection to the world outside the museum. This mode of visiting is sought out by children and is tolerated by teachers and museum staff. The mobile phone is a personal object and it is a device which to a certain extent is in the power of the child. The mobile phone is a space *of me* and *for me* in the larger public space.

The museum permits photography, and during family visits photography is not restricted, but the use of cameras is restricted on guided tours. Mobile phone cameras translate the museum visitor into a preteen phenomenon, which cracks open the museum with a practice from the outside world.

This mode of engagement is constantly there as potential action, latent photography, but the actual action flickers into and out of existence. There is not a fixed spatial or temporal pattern built into the mobile phone camera. The mobile phone camera does not enact the museum as a mapped terrain in the same way that the exercise pamphlet does. The camera suggests no path. It does not connect certain areas of the museum, or drag the visitor from the bottom to the top floor. The mobile camera in this sense rather tags along while the visitor moves according to architectonically suggested and sociomaterially negotiated paths. Nevertheless the mobile camera does pull visitors to specific, photo-worthy objects. These excursions occur within a limited perimeter. A visitor says to fellow visitors: "I'm gonna go take a picture of the fox." The visitor goes, takes the picture, and returns.

Visitors in this mode of visiting are open to the spontaneous, to looking at what they stumble upon. There is not a predominant intentionality which covers the whole encounter as for exercise pamphlets, but smaller sparks of intention and spontaneity. There are chains of spontaneous seeing something and intentional acts of taking a picture of it. Visitors move through the museum as if it were a

gathering of sights to be caught. The museum is enacted in a pulse or rhythm– the elk, the bear, the walrus etc. The time which is performed is a here and now which is broken into image-slots. It is a stop and go rhythm, dictated by the time it takes to take a picture. It is the rhythm of looking through the lens, pressing down the finger, waiting for a moment and then moving on. The mobile phone camera enacts a series of nows, but not as situations which are brought to a halt, but as the gathering of objects which are already still.

Animal costume mode of visiting

Animal costumes associate visitors and exhibition through imaginary worlds, through play and bodily activity. The costume provides a new body, a new surface, a new pair of eyes, fangs and paws to the visitor. The child's appearance is altered and with this the order of the child is changed. An animal mode of visiting consists of rapid movement and bodily friction with the world. The new body and the imaginary space which comes with it associate the visitor and the exhibition. With animal costumes the museum is enacted as a natural landscape, where the stairs and hallways are hills and passageways. Children run up the stairs and down hallways. The exhibition is enacted as PLAY. The exhibition space is enacted as a natural playground, a collection of branches and a pile of rocks. The exhibition is the scene of children's dramatic animal performances and exhibited animals are props on the scene. With animal costumes children explore the exhibition without content being defined in advance. Animal costumes do not establish links to specific exhibited animals. The animal costume associates the visitor and the exhibition in a looser way than the mobile phone camera's face to face encounter with a bear or the very specific translocation of bits of information of the exercise pamphlet. An animal mode of visiting is more process- than product-oriented. The product of play is play. Play activity exercises quick shifts between spontaneity and intentionality. There is considerable spontaneity in taking cues from the environment, co-players and oneself and using these in the ongoing activity. Simultaneously intentionality is present as the overall intention of playing nature, for example by playing the circle of fighting, dying and coming back to life. The act of playing points towards the now, it points towards engaging in the present moment with imaginative and bodily activity. The time which is performed is cyclical. It can go on for ever, at least in principle, for this mode of visiting is frequently – and particularly on educational visits - allowed left-over time.

Scraps of time.

Animal costumes mediate a mode of visiting which centers on the visitor's interest in trying on new identities and on the ability to imagine things. This mode of visiting is existential in character. It is about being, about trying out new forms, taking form after the museum and becoming the museum. It is a transformative mode of visiting where the visitor is translated into an animal. Animal costumes mediate an all encompassing mingle, a 'full body mingle'. Where the other two objects create a more local kind of shimmer; a shimmer between hand, eye and portable object, animal costumes create a comprehensive shimmering body. In all three modes of visiting, portable objects, visitors and the exhibition mingle. In terms of Serres' philosophy, the child while thinking about the exercise pamphlet becomes the exercise pamphlet. The pen and paper and the hand that holds them disappear in their determinations, and the same applies for the mobile phone camera; the hand, the eye, the camera are dissolved in action. Nevertheless there is a bodily difference between these mingles. Animal costumes bring entire visitor bodies in touch with animal life. Wearing animal costumes visitors are amidst the world of animals. They stand in it.

A rolling ball of action

Exercise pamphlets, mobile phone cameras and animal costumes each mediate a distinct mode of visiting. The manner in which the museum is encountered is related to the portable object and the conjured reality is characteristically toned by each object. The relationship between the portable object and the visitor, however, is a crucial relationship. It is the cardinal association for a mediated mode of visiting: the central decentered center, the dispersed middle, the obligatory relation. Without this association the mediated mode of visiting does not emerge.

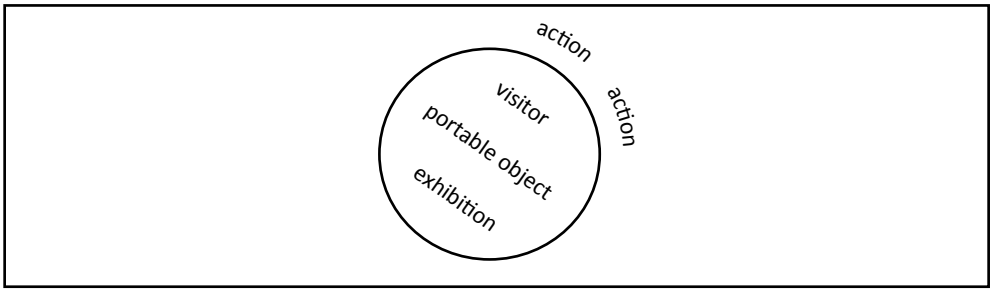

Figure 6. A rolling ball of action. *A cardinal relation in a mediated mode of visiting is the relation between the portable object and the visitor. When the visitor and the portable object are associated they may also relate to the exhibition and a rolling ball of action emerges.*

When an association is made, a coherent entity emerges, in Michael's terms: a co(a)gent, a cogent entity; a hybrid. In action portable object and visitor are merged, and included in this merger is also a certain enactment of the exhibition. Conjoint action is a prerequisite for a mediated mode of visiting, and conjoint action emerges in and co-constitutes the association of portable object, visitor and exhibition. Portable object, visitor and exhibition associate in a rolling ball of action.

The relation between portable objects and visitor is a cardinal point for the enactment of a mode of visiting. In saying this a temporal sequence is established where *first* the portable object and visitor are associated, and then *second*, these associate to the exhibition. Simultaneously, I stress that the exhibition is a *constituent* part of the rolling ball of action. This is a bit ambiguous. I would like to make clear that the temporal sequence in the merger of the various component parts of the rolling ball of action is a narrative construct, as is the limited number of entities which are depicted and accounted for. Innumerable heterogeneous parts can be traced as participants in action, as constituents of the hybrid rolling ball. The action gathering is not a one to one link between a visitor and a portable object. It is an association of multiple entities. What the cogent consists of varies. It is a loosely coupled gathering between visitor, portable object and exhibition, but also includes other human and nonhuman entities. Fellow visitors may become part of the rolling ball, as shown in the previous chapters, but the rolling ball of action also includes numerous intermediaries. To mention a few: The exercise pamphlet rests on a *clipboard*, its pages are *stapled* together, it is completed with a *pencil* and is rested on a *podium* while writing. The mobile phone depends on *electricity*, on *phone memory*, on a *jeans pocket* that keeps it from getting lost. Animal costumes are held together by *thread*, easy opening and closing is made possible with *Velcro*, and the costumes are made accessible with a *costume rack*. As pointed out by Latour incessant chains of blackboxed intermediaries can be traced (1993: 10). When a piece of conjoint action is caught, it can be pulled apart analytically, its components and characteristics may be defined: Who participated in the action? An answer to this question will always be partial. It may be narrated in the form of one visitor coupled to one portable object, and their conjoint association with the exhibition, but this is not exclusive. The emerging hybrid does not really have limits. It has open boundaries. The limit is narratological.

My accounts focus on the association between portable objects and visitors. Visitors associate to numerous other entities than portable objects. The visitor

also relates to exhibited objects and exhibition media without the portable object. And visitors may couple up with portable objects without relating to the exhibition. So: the rolling ball of action consists of more entities than the ones depicted here, and the entities which participate in the rolling ball of action also participate in other action gatherings.

The process of association

The association between portable object and visitor is a labile and fleeting relationship. It is a relationship which continuously is negotiated, started up, broken off, taken up again, and not only the portable object and the visitor negotiate the association. Numerous negotiators meddle in. Some are clear on their stand, they either obstruct or enforce the relation, others are more schizophrenic - or perhaps just postmodern - in character. They have multiple ways of relating to the association of the portable object and visitor. The conjoint action of the portable object and the visitor is embedded in relations to other entities, and these relations are important co-shapers of the course of action.

How the entities gather in action varies. Some associations emerge as easy and spontaneous alignments which cohere in flows of unhindered action. Other associations emerge in a flickering rhythm where action emerges in abrupt oscillations between being manifest at one moment and being stalled in the next, reduced to an urge, an inclination.

Conjoint action is an island of order in a sea of disorder. The island of order grows out of a specific intersection of tectonic plates. Some forces push the portable object and visitor together, enabling their conjoint action and association to the exhibition. Other forces pull the parts from each other, obstructing their conjoint action. Action emerges in a complex fluid turbulence and through multiple pattern of interference. Conjoint action emerges on a background of hubbub, noise, and disorder.

A complexity of forces exerts influence on each emerging association. I have divided the influence which these forces may exert into the terms *enforcement* and *obstruction*. This division resembles the oppositional structure of the actantial model and Latour's concepts of program and anti-program. The influence of portable objects is defined by the relationalities they are embedded in. They have to negotiate about action, about being allowed to participate in the action that they at the same time shape *if* they succeed in participation. Portable objects may both be enforced and obstructed by other entities.

Central forces which shape the associations of portable objects and visitors

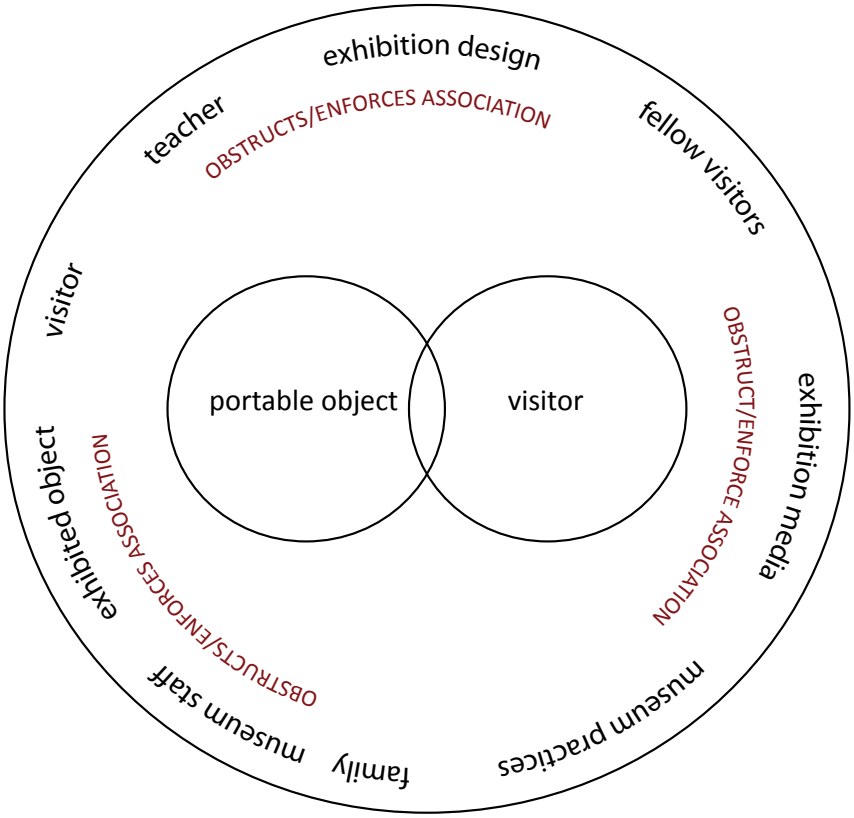

Figure 7. Obstruction and enforcement*. Various forces may enforce or obstruct the association of portable object and visitor and their relation to the exhibition. The visitor and the portable object may be pushed apart or towards each other under influence from various flowing forces such as fellow visitors, other portable objects, exhibition media and exhibited objects*.

are museum staff and practices, fellow visitors, other nonhuman entities, features of the portable object and the visitor. Each of the mentioned influences may both enforce and obstruct. An example of this is the museum's ambivalence towards animal costumes. The museum puts the costumes to the disposal of visitors, but faced with the effect which animal children have on other visitors, the museum's enforcement is flanked by obstruction. A similar ambiguity is found in the museum's approach to mobile phone cameras. The museum both permits and restricts photography. Oscillation between enforcement and obstruction is also found in parent's relations to portable objects. The same parent or grandparent may both enforce and obstruct the completion of a pamphlet, for example. And visitor's may have ambivalent relations to portable objects, both wanting to do pamphlets and not.

Museum staff and practices

Museum staff and museum practices line out the arena which portable objects may act in. The clearest example of museum enforcement is the exercise pamphlet. Exercise pamphlets are enforced by the museum with a prize and by staff suggesting that children do pamphlets. The other portable objects are not in the same way enforced by the museum. The costumes are loaded with more ambivalence from the institutional sender. They are provided by the museum and a sign invites to the use of them, but they are not enforced temporally; the museum does not say: *if you wear the costumes for half an hour and try to see what it is like to be animal, you will get a poster*. They are not introduced at the counter by museum staff. They are in a somewhat distant 'play-area' of the museum. If the children come across them, they may use them.

Fellow visitors

Whether the visitor and the portable object come to act together is a matter of socio-material negotiation and fellow visitors are heavy influences on the course of action. In the case of pamphlets, for example, institutional forces push for the conjoint action, but this action may be obstructed by relatives. Visitors may negotiate amongst one another about whether or not the pamphlet should be allowed to shape their action. Mia's grandmother obstructed Prince Pamphlet from shaping their encounter, but pamphlet's pull on Mia also hindered Grandmother from experiencing the exhibition in the leisurely way which she would like.

Nonhuman entities

Numerous nonhuman entities of various sorts may exert influence on the association of a portable object and visitor. These entities may be other portable objects, but also exhibition media, exhibited objects and the exhibition design, and they may both act as a distraction or as a crucial contributor to a specific association and mediated mode of visiting. Visitors may come across something which catches their attention and obstructs portable object action. The huge body mass of a bearded walrus, whale images diving across displays, orange reindeer silhouettes bouncing on white walls, thunder and lightning which breaks the air, all of these try to catch a hold of visitors.

The user

The visitor who forms part of the association with the portable object may also act as a strong force for the association. The mobile phone is enforced by the strong

relation it has to its user. The use of mobile phone cameras in the exhibition happens entirely on the initiative of visitors. The propensity to take pictures is strong, but the mobile camera like the other portable objects negotiate about being in action, and it is subjected to vast socio-material forces which can counteract it. The strong influence which the mobile camera exercises on the visitor can be rendered ineffective in a split second, when the visitor participating on a guided tour is asked to put the phone away in the pocket.

Visitors may also obstruct portable object action. Not all visitors use their phones to engage in photography, for example. I asked a couple of boys why they weren't taking pictures, and they said that they thought it was more fun to do exercise pamphlets. Other reasons for not doing photography which visitors mentioned was not wanting to use up phone memory, or already having been at the museum and not wanting to take pictures again.

Feature of the portable objects

All three portable objects are easy to use. They are what Michael calls mundane technologies; technologies "whose novelty has worn off; these are technologies that are now fully integrated into, and an unremarkable part of, everyday life." (Michael 2000: 3). The portable objects are mundane technologies. As mentioned earlier, in the thesis introduction, a pamphlet and a costume are so mundane that they hardly are considered technologies. They are what Latour calls 'missing masses', unnoticed technological artefacts (Latour 1992). That a technology is mundane is a feature which may enforce its association with visitors. They know it and they know how to use it. Mobile phone cameras waver somewhere in between the exotic and the mundane. They are mundane in everyday life; users are familiar with them, but they simultaneously provide possibilities which are innovative in a museum communication context.

Another feature of portable objects, which is a strength, is that they all are easily compatible with communication with fellow visitors. They do not impair any of the senses in the way that an audio guide for example does. They do not make communication with fellow visitors difficult. They certainly occupy the senses, but in a manner where it is easy to 'switch out' of them, to participate in what else is going on. This is related to another enforcing feature of the three portable objects; they embody temporal flexibility. They may be stopped and started at the leisure of the visitor, and without having to press a button. The visitor merely by a shift in attention may switch out of the object, and the object puts up with this without complaint. It just waits, ready when the visitor is.

Regardless of these negotiations, enforcements and obstructions stands the point that when visitors and portable objects are associated a characteristic mode of visiting emerges and with this a characteristic version of the exhibition is enacted.

Three versions of the exhibition

Distinct configurations between portable objects, users, fellow visitors and the exhibition produce multiple, co-existing versions of the exhibition. Multiple exhibition enactments overlap in what we in Euclidean terms call one place. The exhibition is more than one and less than many, it is multiple. In the enacted modes of visiting the exhibition emerges as not only one stable spatial arrangement, but as several more or less stable spatial arrangements. The exhibition does not have an inherent quality. Inspired by Law, we can say that it takes form from its relation with other entities (Law 1999: 3).

The exhibition may be contemplated as one coherent shape, as a Euclidean space. It consists of various entities which are spread out on geometrical plane. Each exhibit has a position in these dimensions and the hybrid visitor moves in and through these dimensions and according to quite specific patterns. The exhibition is also enacted as a stable network, an organized space. The exhibition is an assemblage of components which is continuously stabilized by museum staff. The exhibition is maintained as a coherent and fixed network of gathered entities, and all of its component parts are monitored and cared for. Electricity bills are paid, and if something breaks or becomes worn out, it is fixed or replaced. These Euclidean and network spatialities coexist with other spatialities which predominate in visitor practices.

These exhibition spatialities emerge in and are the result of modes of visiting. In each mode of visiting, with each kind of portable object, a characteristic space is enacted. The exhibition is stretched and squeezed, some aspects are enlarged, pulled up front, and others are reduced. The shape is distorted. Is it the same exhibition? In a Euclidean sense, yes, but it is also an exhibition which appears in various shapes, in various relationalities.

The exhibition is both a polysemic and multifunctional space. Metaphorically it may be explored as a large scale version of the mobile phone camera which has the capacity to do various things. Where the mobile phone camera is enacted into a specific version by the user handling the phone, pressing one button or another, the exhibition is also enacted into a specific version by user's actions. Its component parts may be enacted into various meanings and functions. It is more than one and less than many. The exhibition is both handled by the visitor

(where this *handling* is actually more a *bodying*; the whole body is involved), and it is a space which contains the visitor. In this sense the exhibition also holds qualities which resemble that of the animal costume. The visitor steps into and is contained in the animal costume, and the visitor steps into and is contained by the exhibition. The exhibition adds a new texture to the surface meeting point between the visitor and the world.

Does the exercise pamphlet also hold qualities which may be of use in order to understand the exhibition in spatial terms? Where the two other portable objects provide an understanding of the exhibition space as a polysemic and multifunctional container, the pamphlet provides an understanding which highlights Euclidean aspects of the exhibition. Using the pamphlet as a metaphor for spatiality highlights the features of the exhibition as built space, both the exhibition and the pamphlet direct visitors to specific areas and guide patterns of movement. The visitor walks on desired walkways, looks through designated wall openings and stops at desired locations. The pamphlet closely ties up with the exhibition's Euclidean space; in many ways it enacts the architectonic logic of the exhibition, highlighting the division into three floors, specific areas and locations and the links between them.

The exhibition is both a Euclidean space, a stable network which is maintained by staff and a number of flowing and flickering spatialities which are enacted in hybrid visitor practices.

Distortion, visitors and scattered parades of knowledge

When portable objects are at play they create distorted versions of the exhibition. Each mediation carried out by portable objects is a betrayal of aspects of the exhibition. Portable objects deflect rather than reflect. They stitch together a version of the exhibition which fits them. They fix and hold the visit, and transform and distort it. They act as mediators.

Why is it that visitors let these portable objects distort their relation to the exhibition, the Queen Mother, God, Science? From the visitor's perspective all three portable objects add something crucial to the museum visit, they add a sense of 'touch and do'. The portable objects provide transportable, tangible interaction. With portable objects children can feel the exhibition with their hands, on their skin. Portable objects provide texture to the exhibition, and they provide visitors with a tangible order to appear in. Serres gives primacy to the sense of touch, and this makes a suggestion for why it is that children give priority to these enactments; for why they like to do exercise pamphlets, take pictures

and dress up as animals, but also inspired by Serres this primacy of touch may be supplemented with the central notion of 'movement'. Serres writes of the five senses, but he folds the sense of taste and the sense of smell into one, and instead adds a new fifth sense on to the five which we normally know as the five senses. This sense is the sense of joy, which he relates to movement. Serres unfolds this meta-sense by writing about bodily activities such as jumping on the trampoline and swimming.

This suggests an answer to the question posed by Hooper-Greenhill about why people like interactivity in museums, and which is also mentioned in Macdonald's findings that children like to 'do and touch' at the museum. The portable objects bring a sense of *bodily movement* with them. With portable objects children are intertwined with the exhibition in a bodily sense. Instead of being eyes and ears, the body also becomes the hand and the hand's capacity for action when it holds an exercise pamphlet, a mobile phone camera, or the body becomes the entire body when it shimmers into an animal costume, it extends into this being, and the hands become claws that do something animalistic to the world. The portable objects come with a touch and do interactivity, and not only do they offer this kind of activity in a specific location like other interactive exhibits, they transport it. They make it possible for the visitor to carry this kind of interactivity around with them, and with this transportation the exhibition is transformed into a mobile touch and do space.

The three modes of visiting are qualitatively very different from one another as regards how the visitor is enacted. The mediation shapes the visitor into a specific kind of agency and subject position. Visitors may both be found in the form of exercise children, mobile children and animal children. Visitors are configured in different ways in the three mediated encounters. Visitors are an open shape which can couple up with various entities and enact various logics. Visitors do not appear as fixed unities, but as partial identities, as beings which may merge with other units. The visitor is a number of potential hybrids. Visitors link up with portable objects and they take on forms which are in accordance with the portable object that they are engaged in. The action, movement and gaze of the visitor are co-constructed by the three portable objects.

For all of the mediated modes of visiting it can be contemplated what visitors are *not* involved in. From an agenda of knowledge transmission it may be considered problematic for example that children who are engaged with mobile phone cameras do not engage with animals as categories, names, information about habitat etc. From an aesthetic agenda it may be considered problematic

that children who are engaged in exercise pamphlets do not sense the exhibition in terms of light and sound. These kinds of considerations about what the visitor misses out on depend on which intent is in focus. Viewing the occurring interactions as problematic from one perspective or other ties in with having specific ideas for what kind of interaction is desired.

If the exhibition is seen as a parade of a specific kind of knowledge the portable objects may be seen as betrayers. They do not faithfully convey the word. But is there a single word to convey? Sender intentions are not singular. Parading knowledge is no simple matter. One organizational sender may have more than one intention with an exhibition, and furthermore exhibitions are negotiated from multiple organizational positions, between staff with various professional backgrounds, for example. Exhibitions are negotiated into shape in tension. Exhibitions do not parade one kind of knowledge. They are sociomaterial negotiations of various forms of knowledge.

At Naturama one of the tensions which exhibitions are produced in is a perceived split between experience, fun and play on one hand and on the other learning, science and education. This was a recurrent theme in the internal communication which took place while a special exhibition on climate changes was produced, and is also mentioned by staff more generally as a perceived dilemma between being 'spectacular' and 'scientific'. Sender intentions are not singular, they are also multiple and negotiated.

Portable objects create distorted versions of the exhibition, but this takes on a somewhat less problematic air when the exhibition is pulled down from the throne. The exhibition is not god, nor science, nor queen. The exhibition itself is a betrayer, mediator and broker, and each of the three portable objects are sign-giving; messengers. They mediate between distinct worlds, between the world of natural history and the world of visitors. They mediate between science and the public, and in this sense they do what the exhibition is supposed to do, for the exhibition itself is a message-bearer, a messenger, designated to mediate between science and the public. The exhibition archangel is flanked by multiple other messengers. They are all message-bearing systems and their overlapping interactions are what Serres calls "the intercommunication of message-bearing systems" (1993/1995). The museum embodies interference between various message-bearing systems.

10
Shifting modes of visiting

This chapter shows how various modes of visiting coexist and interfere and conjures the museum visitor as a changeling, a metamorphic shape shifter who within moments passes from notary to animal child and back again. The museum visit is an intersection of interferences and simultaneously is a point of exchange.

There are multiple, coexisting modes of visiting, but these modes do more than co-exist, they also interfere with one another. Law and Mol point out that because of multiplicity, because there are multiple orders, it becomes of central interest how multiple orders relate (Law 2004: 61; Mol & Law 2002: 11). Within moments visitors may both engage in and step out of distinct mediations – as distinct and coexisting ways of visiting the museum. This chapter will use the themes of interference, overlap and shift to explore how enacted modes of visiting relate. Interference may take on a form where different orders rub against one another, where for example two modes of visiting clash. Interference may also occur as overlap, for example where two modes of visiting are enacted simultaneously but also affect one another. And interference may take on the form of shifts where one mode of visiting is replaced by another in a specific moment during a museum visit. Both overlap and shift are a form of interference.

Interference

Several cases of interference are described in the first three analytical chapters, chapters six, seven and eight. Exercise pamphlets disturb a mode of visiting which consists of walking peacefully through the exhibition, looking at things as they are encountered. Fie's father gets really weary of the girl's pamphlet - to the degree that he wishes exercise pamphlets banned. Mia's grandmother in a similar manner feels terribly disturbed by the influence the pamphlet has on her granddaughter, and thus on their museum visit. Adults may feel stressed by pamphlets, or rather

by the effect pamphlet children have on the museum visit. Children go on and on about pamphlets, and are only receptive to doing something which relates to pamphlets. Pamphlets start a ball rolling and there is no stopping it, it rolls until the end, until it is finally finished. Its logic is its own. Tension is created among family members when the pamphlet occupies the entire horizon of what a child sees, resulting in the child pulling at parents or grandparents in order to get them to follow the agenda of the pamphlet and come along immediately on the quest for a musk ox. Now. Come on, come on, come on. Come on!

Interference is also present in another way in pamphlet interactions. Pamphlets may interfere with their own purpose. Some pamphlets disturb an educational intent of teaching children biology. Most pamphlets are devised with the intent of engaging children in themes which are relevant from a biology perspective, but in some of the pamphlet mediations this intent is counteracted. The pamphlet does not add to educational engagements, but subtracts from them; an illustrative example of this is the situation where Bea and Anton talk about polar bears and the threat of their extinction because of climate changes, and then are distracted from this conversation because of a pamphlet Easter egg hunt. In this specific situation, the course of action which Bea is involved in takes on a pattern where one disturbance replaces the next: Bea and Anton's conversation about polar bears and climate changes is interrupted by the Easter egg. In order to mark the egg off on the exercise sheet the children run down the stairs to Water to go and find the egg in its location next to the walrus. On the way down the stairs, however, Bea sees a computer Nature Base, and she momentarily forgets about the egg. She stops at the computer for a moment, clicks a couple of times and starts reading about baleen whales, but then is distracted, the text is a bit too difficult, she looks around and notices the walrus, remembers the egg and the pamphlet and leaves the nature base in order to go to the walrus egg. One disturbance replaces another. A similar pattern of ongoing disturbances emerges in another girl's museum encounter. Within a selected three minutes and 50 seconds Sara (13), is into: an exercise pamphlet, a phone, an exercise pamphlet, a nature base, a pamphlet and a wall mounted interactive screen. A series of mediations replace each other.

Interference between different orders also occurs when a mobile phone camera mode of visiting rubs against the order of a guided tour. Mobile phone cameras disturb guided tours. This is spelled out very clearly by a guide who bans the use of mobile phone cameras during the tour, and is explained in an interview as well. Mobile phone cameras disturb visitors, who cannot be attentive to the

tour and simultaneously perform photography. According to guides, these modes of visiting are incompatible. They interfere with each other. Cameras disturb tours, and reciprocally the guided tour hinders the act of photography: the use of phones is restricted.

Clashes between distinct modes of visiting are manifest also when children wearing animal costumes roam the museum and transform it into a playground and while doing so disturb other visitors. Animal costumes disrupt an adult mode of visiting. This disruption relates to the one created by exercise pamphlets, because in both cases an adult mode of visiting is disturbed, but where pamphlets disturb family interaction by introducing their own agenda and the urge for completion, animal children disturb adult visitors – sometimes strangers - by bumping into them. Animal costumes enact tangible friction between orders.

These are all cases of interference between different enactments of the exhibition. Inspired by Law and Serres we can say that multiple modes of visiting rub against each other (Law 2007: 5).

Overlap

Another kind of interference occurs where modes of visiting overlap, for example when children dressed in animal costumes pose for photography. Second grade teacher, Joachim, says: "Now put on all of the costumes and stand up in rows so Sofie can take a picture of all of you." (Sofie is the other teacher.) In this situation, animal costumes are subjected to the order of photography. A purpose which relates to the camera superimposes itself onto animal costumes. Getting dressed in costumes is ascribed meaning from the logic of photography, instead of play being the purpose of being dressed in animal costumes, photography becomes the purpose. Animal children are tamed as photo opportunities. One aspect of this enactment is that children are subjected to an adult gaze of 'cuteness', but children also participate actively in choreographing this performance. Some of the children talk about where and how they should stand.

"Sofie, Sofie – we can take a picture, where everyone is seated up against that thing," a child suggests and points to The Bear Cave, another child hears this and takes this idea further by saying, "Or is standing in front of it." A third child calls out in a loud voice from on top of the cave. "Everyone dressed up as animal come up here…" Photo-choreography occurs at the same time as children are working on getting into animal costumes and are talking with teachers about what they are.

"What are you?" the teacher, Joachim, asks.

"I am a hare," a child replies.

"You are a hare," Joachim echoes.

Another child hears this exchange, and butts in.

"I don't know what I am, Joachim do you know what I am?"

"You are an elk or a deer," Joachim says, and looks at yet another child.

"And what are you?"

The child looks down at the costume, doesn't really know what to say.

"Isn't it a wild boar?" a classmate suggests.

"Yes, of course, it is a wild boar," Joachim replies.

At the same time children who are already dressed in costumes are playing around, roaring with gargantuan voices, charging at each other. Several aspects of the animal costume mode of visiting are present and take place simultaneously. The children are getting dressed up; they are socially and materially negotiating the distribution and fit of costumes. They talk about what they are; identity is being worked out. And they are in animal action; fighting and growling.

When all of the children are dressed in costumes, rows are formed, under continuous negotiations: some children have to be convinced to participate in the photo, other children have an opinion about how they should stand, and this negotiation all goes on as the teacher photographer tries to fit them all in one picture. In this situation, animal identity is also negotiated, translated into a form which may rest with photography: a child suggests that they be statues.

"Remember, we're gonna be statues."

Sofie, the teacher, tries to fit them all in on one picture.

"Everybody stand still – now you stay there, I'm gonna take it now –

"You really are a bit too far apart – could I perhaps have Paul and Katja down?"

This starts some bustle.

"I wanna stand there."

"No – now I'm standing here."

"Hurry up and take…"

"I'm doing what I can here," Sofie exclaims and then a clicking sound is heard.

"OK – and I think that all of you were on it."

"May I see?"

After the short moment of photographic fixation some of the children take off their costumes, others play around. Several orders are at play simultaneously. An animal mode of visiting consists of several distinct processes: getting dressed, being something and acting as animal, and this mode of visiting coexists with photography. The mode of photography overlaps with the enactment of animal

costumes. For a short moment, photography imposes a certain sense of order, the order of a statue, fixed in a pose, but this is for a short moment, and then the clamor starts again. I feel tempted to quote Serres: "Before the ordering of turbulence, or after it, what rules is the distribution of hazard and chance." (Serres 1993/1995: 92). The children are in incessant commotion. Their standing still, posing for photography is an exception. Under normal conditions they are a scattered stock. Like Serres' angels.

Visitors participate in various mediations

Within moments visitors may engage in various mediations – as distinct and coexisting ways of doing the exhibition. When visitors participate in several mediated encounters, and when they step into and out of distinct mediations, they are stepping into and out of distinct orders.

A girl, about 12 or 13 years old, stands in front of a podium on Land. Her blonde hair hangs loose down her back. Her arm is stretched up in front of her with a mobile phone in her hand. She looks at an elk through her camera, takes a picture. All of a sudden a boy, a head and a half shorter than she, comes over to her and starts scraping at her, he is wearing an animal costume, he jumps up at her, uses his paws to scratch her. She looks at him and obviously she knows him very well, he keeps on pawing at her and she doesn't really say anything, she doesn't ask him to leave, she smiles. They have this little interaction and then they proceed to their own activities. The boy runs through the exhibition. He runs past me. Being a fox, he runs.

Later, on Water, I see them again. This time the children are accompanied by their mother and grandmother. The family is doing everything at the same time. The boy is still wearing the fox costume, but in his hands he has an exercise pamphlet, he is trying to do the exercises with help from his mother. His sister walks around, seeing things through her mobile camera. Then mother and son have some trouble finding the answer for one of the questions, and they ask the girl for help. They all look at the exercise pamphlet. The two children sit down on the banister which edges off a podium with some sea birds, seals and a walrus. They spend some time pondering the question. They try reading it again. There is something about the walrus that they can't figure out. The children get up from the banister and the little group moves to the Nature Base to see if they can find the answer for the question there. The boy takes off his fox head, holding a mouse in his hand, he clicks. The girl wanders off again, looking at the exhibition through her mobile, taking pictures, incessantly.

Within a short period of time this boy and girl interact with three portable objects. The girl does a pictorial grasping of animal realities which is made possible by her mobile phone camera. The boy performs the exhibition as it is scripted in an educational exercise pamphlet and he simultaneously wears an animal costume which permits him the embodied being of a fox.

Several action nets

Judging from physical appearance the user may be involved in several enactments at the same time. The user may both be wearing an animal costume and holding an exercise pamphlet. What is enacted then? Is the exhibition performed by an animal or as a scholastic gathering of information? This can be determined by looking at the action which emerges. The actions of these hybridised visitors are characteristic. They are easily distinguished from one another. The actions which are carried out show which portable object is active at this moment.

A child can be wearing an animal costume, but not be oriented towards the costume. The child and the costume are not associated in action. The animal head is easily removed, both literally and metaphorically. Action can shift quickly, easily. The boy, even though he is still wearing the animal costume, is no longer an animal. He is a boy doing an exercise. He looks at the exhibition as a site for finding answers. The girl, even though she is still holding her mobile phone camera in her hand, is no longer doing photography. She turns into a girl doing an exercise. She enters into the frame of thought which is built into the pamphlet and sees the exhibition through this optic. Both children engage in exercise pamphlet action.

An aspect of these interfering enactments is a shifting gaze (Urry 2002). The family members within a short span of time engage in several ways of looking. They enter and exit the ways of looking that go with the mediating objects. In the first interaction where the boy attacks his older sister, the two children are both engaged in their own perspective (that is the perspective of the mobile camera and the perspective of the animal costume). The boy interrupts the girl's way of seeing. She pauses, moves away from her phone, but she does not engage in his way of looking, in his way of acting. She does not become an animal. In the second interaction something else happens. Here the girl engages in pamphlet action, she looks with a pamphlet gaze, as does the boy.

In these interactions each of the children have one portable object which seems primary to them, but they also align themselves with the action nets which emanate from the objects which their sibling carries. The connections which are established to and from their preferred portable object co-exist with other con-

nections. The boy is involved in two action nets – that of the animal costume and the exercise pamphlet. The girl is also engaged in two action nets. She is primarily oriented towards her activity of photography and using her mobile phone camera as a way of connecting to the exhibited animals, but she is also loosely coupled to the activity which evolves from the exercise pamphlet.

Users relate to the museum exhibition through the portable object, but they also do so by linking up with other entities. The prescriptions made by one portable object is contested and negotiated by other objects. In users' interactions with the museum exhibition, we can see the emergence of not only one action net, but of several more or less stable alignments. These are associations where the links between the participants are provisional and divergent. "The various components of the network continually re-negotiate with one another, form variable and revisable coalitions, and assume ever-changing shapes," writes Murdoch referring to Callon (Murdoch 1998: 362). Portable objects negotiate among each other and the shifting interactions may be seen as fluxes among and in loose nets.

A loose coupling takes place between the portable object and the visitor. The visitor is engaged in, but can also step out of - or be pulled out of - the association. The relation between one portable object and the visitor coexists with other relationships. The museum exhibition, users and mediating objects may be understood as a series of potential networks. Portable (and other) objects are part of a network of potential, capacity – actions which have not yet become actions, slumbering actions. Metaphorically speaking, fine, relational threads are stretched out between all of the entities – human and nonhuman. These are the potential nets. But they don't really *work*, before they are put into action. Action transforms the fine thread of potentiality to a stronger umbilical cord.

Action is not conceived out of exclusive relationship between the visitor and the portable object. Action emerges as the result of a flirtatious relationship between the visitor and several objects, where other entities – human and nonhuman - also meddle in and exert influence.

Anti-programs to each other

Latour states that various entities may be assembled to enforce an action program. But in the case of the portable objects at the museum, different objects with distinct action programs negotiate among each other. The portable objects have action programmes which are not related, which actually are in conflict with one another. Instead of assemblages of objects that work together to reduce antiprograms we see objects compete for action. The objects do not support the

same action program. Instead, the objects become antiprograms to each other.

The objects negotiate about action, about the power to be in action. The mediating (and other) objects exercise a certain pull. They afford, permit and prescribe certain modes of interaction (Latour 1992). Certain actions become possible with them. They may invite to action, by being present, being there in the users' hand, being on the users' body. The object which (with its backing choir) pulls the hardest at the visitor, is the winner, this object is animated – comes to action and with this comes to life. But the portable objects are also counteracted by other entities, as mentioned; by fellow visitors and Nature Guides, but also by other nonhumans who may try to initiate an action association. The program of the animal costume may be disturbed by the exercise pamphlet, for example. In this moment, the exercise pamphlet exercises a stronger action program than the animal costume, and thus settles in on top of the child. The power between portable objects (and their associated entities) shifts within moments. Objects may authorize, allow, afford, encourage, inspire, permit, suggest, influence, block, forbid, etc (Latour 2005). Objects may catch attention or fail to catch attention. Be perceived or not. When the exercise pamphlet - perhaps enforced by a helping fellow visitor – succeeds in pulling the child out of animal action, the costume goes from being enacted to not being enacted. Action is negotiated.

Objects rendered to voids

Objects are not enacted all the time. STS-scholar, historian and philosopher of science, Helen Verran, writes of entities that we can imagine them as existing in an "oscillating way, forever ready, awaiting their cue in the wings." (2007: 112). Verran vividly describes it as if there is a void, an empty space between enactments of entities. She writes of numbers, she writes: "To understand numbers' agency in this ontic sense we can imagine them, like all agential entities, as inhabiting the spaces or intervals between collective enactments. Numbers seem to lie there mostly just out of focus in collective life, always ready to actively re-exist when we do the right actions and say the right words. I imagine numbers pulsating and quivering there in these intervals, always in potentia, apart from their brilliant, ephemeral realization or clotting in enactment, time and time again." (Verran 2007: 112).

Numbers, but also other entities - portable objects for example – sometimes exist anonymously, inactive, in voids which fall between the repetitious and recurrent patterns of practice: "Entities lurk or loom in the interstices between the repetition by which they are done." (Verran 2007: 113). When objects are not in

action, they linger around in no man's land. They are at rest in small, dark spaces.

When a portable object is not enacted, the hybrid association is not enacted either. When an object is rendered to a void a hybrid disappears, momentarily. Michael in relation to his co(a)gents argues that when hybrid associations are not visible, when they are not manifest in agency, they are still there, they are still present (Michael 2000: 131). As mentioned in chapter four, the theoretical chapter: the scientist is still there when she is not at work, when she is playing with her daughter. I agree with this reasoning, the scientist still exists, but I prefer to say that the scientist is not present, she is absent. When a hybrid is not manifest in agency it has disappeared, it is absent – for the moment. I see the hybrid association as being present when it is manifest in action and as being absent when it is not in action. This is compatible with Michael's point, although the issue of presence and absence is defined differently. I argue that a hybrid may be considered absent, but still existent. Absence from action in a specific situation is not non-existence. The hybrid may still exist although it is not manifest in agency. Hybrid action may appear and disappear in a flickering rhythm, and hybrids may oscillate between presence and absence, as the rhythm of photography suggests.

With Michael we can see that the visitor consists of different sub-relationalities. The visitor consists of animal child, mobile camera girl and pamphlet child. These are different aspects of the visitor which each contribute with fragments of agency and identity. One visitor may be a common figure in several co(a)gents, but the visitor can not be scraped 'clean' of all hybridity, shaved into the purely human. The visitor is multiple sociomaterial entanglements. The visitor participates in various action associations. The visitor is a component of these, a part, but the visitor is also changed in/with each action association: "Reshaped to the configuration of the new co(a)gent," as Michael writes (2000:143).

The various action associations, the various hybrids, or co(a)gencies, are partially connected. Some connections are more partial, more labile, slipping and changing, than others. Mobile girl, for example is more steady going than animal child is. Mobile girl actually precedes the visitor. So where we before could say that mobile girl is a fragment of agency of the visitor, we can also point out that the visitor is a fragment of agency of mobile girl. The pervasive character of the mobile phone strongly enforces the action of photography and thus the continuous appearance of the mobile phone visitor hybrid. But nevertheless the hybrid also disappears in moments. Hybrids may appear and disappear in a flickering rhythm. When portable objects are not in action, they may be considered as being in voids. They exist as potential, perhaps even as urges and intentions in relations to spe-

cific people. The visitor engages in various mediated encounters, but mediated encounters may also be ignored or rejected for a variety of reasons. Negotiation goes on about what should be acted, about action. Engagement and rejection do not occur once and for all. A portable object may be enacted in one moment, and be pushed to the background in another moment. Engagement or rejection emerges as the result of negotiation between multiple, heterogeneous entities.

Ignored pamphlets

Sara (13) is carrying an exercise pamphlet in her hands, but she is not engaged in solving the exercises. It is utterly ignored. At one point she stands at a Nature Base, she has laid her exercise pamphlet next to her, it is the difficult Scrape an Egg pamphlet, with a loose leaf inserted. Without noticing it, while moving the mouse around on the desk top, she touches the pamphlet which lies on the edge of the table, and the pamphlet insert falls to the floor. She doesn't see this, and when she is finished at the computer, she walks away without the insert. It is lost.

Sara's pamphlet is not the only pamphlet which is rendered to a void. Ann's Scrape an Egg pamphlet has a similar destiny. The family members stand around together. Referring to the exercise pamphlets, Mother says, "How far have you gotten?" Johannes bends over, rests the exercise board on the podium, he flips the pages, showing the board to his mother. She looks at Johannes' board, and then referring to Ann and Sara's pamphlets says: "and yours is upstairs at the birds, isn't it?" The girls don't reply to this question. The group scatters again, but Ann follows in the tracks of her mother and grabs the exercise pamphlet out of her mothers open basket bag. While walking after her mother, she looks at the front page, she looks at the centre page. She then unnoticed slips the exercise pamphlet back into the basket again. Ann's pamphlet is put to rest. The pamphlet is not interesting to the girl, and she chooses to ignore it. Ann proceeds with doing photography, she comes across the huge polar bear, and takes pictures of it.

At a later point, the children come across the animal costumes. These leave both the mobile phone camera and Johannes' exercise pamphlet abandoned. Ann puts her phone in her pocket. Johannes who earlier has been deeply involved in pamphlet action now puts his exercise board on top of a trash can, which stands on the floor right next to the costume rack.

Ann stands at the entry to The Touch Room.

"Aah, do you wanna get dressed up Johannes?" she asks. No reply.

"Do you wanna get dressed?"

"Yeah."

"Okay," Ann says and looks at different costumes.

"How about this one?" she suggests.

Johannes walks around, sees the polar bear costume.

"The polar bear, the polar bear." Ann helps Johannes get dressed. She puts on his paws. She closes the Velcro. Then she directs him towards the adjacent area of the exhibition, where their mother and grandmother are. They leave the exercise pamphlet behind on top of a trash can. Ann carries Johannes' shoes. After having shown their mother and grandmother Johannes the polar bear, the children return to the animal costumes. They get Johannes dressed in another costume, and another, the third costume is an elk. After having gotten dressed in the costume, elk Andreas crawls around on the floor. He butts Ann.

"Aargh, my leg, man," she cries out.

"What is it?" asks the children's mother, who has just joined them.

"He bumped right into my leg," Ann says and to this mother replies:

"We need to get an overview of how far you have gotten."

POOOF the exercise pamphlet is rendered into existence again. Bye, bye animal costume. The exercise pamphlet is rendered into existence as an alternative to uncontrolled, animal like behaviour. The exercise pamphlet which had been pushed to the background by the assemblage of animal costumes and the children's cooperation on morphing Johannes into several animal forms is now, by the heavy weight of a mother's remark, pulled back into action. Animal child is transformed into exercise child.

Johannes, now standing on his own two feet, still wearing the costume, waves his hand in front of his face, he says: "I'm hot." From being an animal engaged in animal action and this kind of bodily space, Johannes now steps into metacommunication where he tells what it does to Johannes the boy to be dressed in this warm costume. No one comments on this. Mom looks at the exercise board, Ann flips the pages of Johannes' exercise board, shows her the marks Johannes has made, shows her that level Water and level Land are complete.

"Then we have to go up to the birds," Mom says.

"Yes," Ann replies. Ann who only randomly has participated in solving the exercises here uses Johannes' pamphlet to enforce herself as a dutiful and competent museum visitor. In this action of showing her mother Johannes' pamphlet, Ann shifts into an exercise pamphlet mode of visiting. In this moment where Ann engages with the pamphlet, she is exercise child.

Shift of character and space-time as in narratives

I see the shifts which Johannes and Ann undergo as not entirely unlike the shifting which may take place in narratives. Latour writes: "In storytelling, one calls *shifting out* any displacement of a character to another space time, or character." (Latour 1992: 248).

Each portable object participates in enacting a specific mode of visiting. This mode of visiting consists of a characteristic pattern of action, character, space and time. Each portable object has its own hybrid character, and each hybrid character has its own characteristic way of *acting* and way of *enacting space-time*. (Although each mode of visiting might be broken down further into several characters, for simplicity I am coupling a portable object and its corresponding mode of visiting with one character, pattern of action and space-time.)

When a specific character is enacted, a characteristic time and space are also enacted. Shifts between portable objects are shifts between patterns of action, and thus shifts in character, space and time. The child exits the space and time of the exercise pamphlet, and enters the space and time of the animal costume. Inspired by this narratological concept of shifting, the interferences between multiple modes of visiting - as they occur with one visitor as their intersection - may be understood as the 'displacement of a character to another space, time or character'. In this terminology, the initial character of the visitor is dispersed into several other characters and the visitor assumes form by being practiced from moment to moment. The initial character may be a hybrid already when entering the museum – mobile girl for example – and this hybrid is then multiplied. A visitor who enters the fluid turbulent field of the exhibition is multiplied into several partial coherencies, into several hybrid configurations, which he or she may shift between.

In visitor's encounters with the exhibition a great many shifts take place. Johannes shifts first from exercise child to animal child, and not only to animal child, but also to several versions of animal child, and then he is shifted out of animal child again. When the children come across the costumes, Ann is also shifted. Ann shifts from mobile camera girl into an animal costume mode of visiting, where her role however is not that of being a central character, but rather that of the helper, she helps Johannes undergo the transformation into animal child.

Multiple modes of visiting may overlap in one museum visit, but in specific moments of action for one visitor one hybrid character replaces the other. The stability of a hybrid is butted at by the coming together of another hybrid. The different mediations push at each other. In the moment where Ann engages with

the pamphlet, she is exercise child. One hybrid sparks into existence, and with this another is rendered to absence. In this instantaneous shift, the visitor shifts from one form to another. The shift from camera child to exercise child, or from exercise child to animal child is a shift of character which emerges as a result of action. One hybrid character leaves, another comes, within moments the visitor assumes multiple shapes.

The family stands around for a moment while Johannes gets out of the costume. Mom and Grandmother hang costumes on hangers. Johannes, now no longer wearing a costume, grabs Ann around the waist.

"Stop Johannes!" she twists open his arms.

The child who earlier was deeply engaged in the exercise pamphlet and who through the whole time of doing the pamphlet did not once do anything to annoy his sister, now for the second time within a few minutes seeks out physical encounters with her. The character and the enacted space-time apparently lingers although the costume is gone. Mom gently beckons Johannes to stop, and the family takes off, they have decided to have lunch now, before doing the pamphlet-birds. Johannes' pamphlet is deposited in mother's basket bag. It was briefly mentioned by the mother in order to call forth a more orderly Johannes, but now is put to rest side by side with Ann's ignored Scrape an Egg pamphlet. Johannes' pamphlet lies quivering, pulsating. It has gone from being a primary force in Johannes' museum visit, to now being bereft of action. It rests, waiting for its cue.

On their way to the cafeteria Johannes runs down the stairs. When they arrive to the shop area Johannes takes a poster roll out of a sales rack. He smacks the bottoms of both grandmother and mother. Animal child is not easily exorcised.

A permanent state of shift

During the museum visit a configuring and reconfiguring takes place between the visitor, portable objects and the exhibition. *When* shifts occur is not easily predicted. They may be described as they occur, but there is no easily discernable logic to them. There is not the logic of 'when it becomes dark werewolves emerge' or the like. The equation would go something more like 'shifts may occur when a variety of heterogeneous forces succeed in summoning another hybrid' or mode of visiting. A variety of socio-material forces shape the course of action, and conjure up shifts.

Shifting enactments emerge easily, spontaneously. Within moments the visitor may be transformed. The shifts do not entail reflexivity. They do not seem

to happen as reflective acts where the visitor stops and thinks "Now I am going out of this state of being oriented towards the animal costume and into another state of orientation". The shifts happen impulsively, immediately. The visitor's relating to portable objects and the exhibition is a continuous configuring and refiguring of associations.

The shape shifting assumes both fluid and flickering forms, as something in between a lava lamp and a stroboscope. The visitor merges with portable objects and the exhibition, and like a shape in a lava lamp, bounces around for a while in this form, and then easily transfigures into another make up. The shape shifting has fluid qualities, but it is not slow and calm, it also has an erratic and abrupt character, it exists as tide, rip and whirl, stroboscopic. Within moments shape is shifted from one state to another and back again – or perhaps to a third mode? The visitor does not shift into a permanent state of being, but is in a state of permanent shift, unpredictable in character.

Shift as a redistribution of sense

Visitors participate in multiple mediations and shift back and forth between distinct enactments. Serres' example of the body playing ball with the soul can be used to help unfold the flickering character of these associations. In the metaphor of playing ball – the visitor plays ball with the portable objects, touching first one and then the next. The visitor shifts from one point of exchange to the next. Portable objects, visitors and the exhibition associate in wandering, in meetings, intersections and points of exchange, and these shifting points of exchange may be explored as shifting senses, as shifting exchanges between the body and the exhibition, the visitor and the world.

Serres argues that a central feature of sense is *direction, orientation.* Sense is movement, visiting, wandering, consciousness and body on conjoint excursion. Sensing is visiting, Serres points out (1985/2008: 236ff). Visiting is the action of wandering, of going somewhere, moving to something and from something else. This is what the visitor does. Wanders, senses. Sense wanders from one location to another, from one object to another.

A shift of portable object is also a shift of sense, a shift in what is being visited. Shift may be understood as a redistribution of sense. It is a redistribution of the association between the visitor, portable objects and exhibition. The visitor flows into the exercise pamphlet, the mobile camera, the animal costume. The point of exchange moves, takes a walk, wanders. The body shifts, the senses shift and consciousness shifts. So shifting is a change in how the visitor is dispersed.

It is an alteration of which distribution the visitor is engaged in, a sensational process of morphing and diffusion. A shimmering occurs there in the interchange between body, consciousness, sense and world. It is a process of body, consciousness, sense, object and space shimmering into a new form. The visitor is in flux, in movement, a metamorphic shape shifter.

The body both anchors and spreads out. The body centers these movements, these shifts, these shimmerings. It is their fluid intersection. It anchors the meeting points and stopping points, but also the ruptures and shiftings from one point to the next. The body of the visitor forms and reforms itself. It is on the move, flowing, spreading. It spreads in the fluidity, the shimmering and mingling of the senses, in the movements of consciousness, of soul and I, from one point of exchange to another, from one sense to another, from one orientation to the next. Interactions take the form of rupture, gap and turbulence, and the visitor him or herself is a whirlwind, a turbulence, a flicker, on the move, shimmering in various encounters. The body is multiple bodies. The visitor is multiple visitors, variegated and hybrid. The visitor all the time exceeds him or herself, exchanges with portable objects, with other visitors, with other media, with exhibits. The visitor does this with the portable objects, but the visitor also does so without them. With the portable objects the body becomes what it already is, dispersed, flowing, spreading. The visitor is a changeling, engaged in the enactment of multiple orders, a distributed embodiment of multiplicity. The shifting associations between portable objects, visitor and exhibition are interchanging mixtures of shimmering beings.

The visitor switches between different portable objects, and thus between ways of seeing, acting and moving. The visitor appears to be capable of being involved in radically different enactments within one museum visit. Furthermore the visitor appears to be able to actively seek out different hybridised states of being, different hybridised encounters and thus different enactments and realities.

Shifts between different objects manifest fluxes and movements in the doing of the exhibition. They manifest multiple and changing exhibition enactments. These different enactments interact with and interfere with one another. The exhibition is a gathering of numerous entities which yell and scream for attention, for enactment. Who is heard depends on the visitor, fellow visitors, mediating objects, the characteristics of the screamer and other unpredictable forces. Fluxes occur both as disturbances created by other visitors, and as multiple enactments which intersect in one visitor's sensory engagements.

The museum visit

Multiple modes of visiting continuously overlap and interfere – coexist and collide – and this multiplicity adds up to a museum visit being a flow of disturbances. The association of portable object, visitor and exhibition is continuously interrupted – destabilized. The interaction is destabilized by family members who have an opinion about how the museum should be experienced, who reject or cooperate. Furthermore, exhibited objects catch the attention of the visitor - rapid, fleeting, momentarily, and so do other portable objects - which provide other ways of looking, other modes of visiting. So the interaction between the visitor and the portable object, and between the visitor and the exhibition, can not be understood as a single pattern of action. It has to be understood as multiple intertwined, interweaving and entangled patterns of action. The museum encounter becomes a complexity of overlapping, flowing and flickering subject-object, subject-subject-object, subject-object-object etc. constellations. The museum encounter is a process of morphing, incessant appearances and disappearances.

A museum visit is a continuous shift between multiple engagements of both social and material character; of heterogeneous fusion and fission, connection and disconnection, the making and breaking of relations. Portable objects are distractions from exhibited objects, exhibited objects are distractions from each other, portable objects distract users from stationary media, portable objects distract users from each other, stationary media distract users from portable objects, fellow visitors distract users from stationary media and fellow visitors distract users from portable objects. The museum visit is a gathering of socio-material negotiations. Is the visit a school trip or a family visit, does somebody have a special interest in the wolf, are fellow visitors young or old, how many adults are there per child, does somebody have a special interest in the whale, how many other visitors are there in the exhibition, were there any pamphlets on sale today, is there a wheel chair to consider, a stroller to fight the stairs with, a mobile phone camera to look with, a child who loves pushing the buttons in the elevator, a lunch to be eaten, a diaper to change, 20 kroner to be spent on candy or the need for a birthday gift coming up?

Conceptualizing the museum visit as patterns of interference resembles what Weibel and Latour experiment with when they let seven curators create one exhibition (2007: 98). Their idea is that these many curators will interfere with each other, thus creating patterns of interference. My analyses show patterns of interference not as a curatorial intent, but as they emerge in negotiations between visitors, portable objects and exhibition.

Museum visits are interferences, overlaps and shifts. They are orders, but random, abrupt, and flowing orders, orders which rip and whirl. Museum visits are an accomplishment which grows out of a sea of multiple flowing and churning movements. They are fluid turbulences; forces pulling and pushing in unpredictable ways. Museum visits are patterns which grow out of tumult, clamor and hubbub, and they themselves are tumult, clamor and hubbub. They are multiple distorting mediations rubbing against one another. Flicker and stroboscopic lightning which emerge out of a sea of disorder.

The visit is an intersection of interferences, but it is also a point of exchange. The hand, the skin, the eye - the senses - form points of exchange between the visitor and the portable object. The portable object forms points of exchange between the visitor and the exhibition. The visitor forms a point of exchange between the exhibition and the world. The visitor mediates the outer world to the exhibition. The visitor brings in the outside world, very tangible in the introduction of the mobile phone, an intruder from the outside which messes up museum orders. And conversely, the exhibition mediates a world to the visitor, the world of nature, animals, biology. The exhibition displays inaccessible spheres, the world under water, the tusk of a narwhal, a large eyed baby seal, the weighty body size of an elk and the fascinating mohawk of a Bohemian waxwing.

The visit is a point of exchange. The visit mediates the world of the visitor and the world of the museum. In the museum encounter, in the visit, both the museum and the visitor are brought into existence, in momentary and fleeting forms, but also in impressive forms, as sensations which may last a lifetime, which may linger around in voids as memories to be conjured by other exhibited animals, in other places and times, memories from when the child was not yet born and the visitor was another.

Dear friend

You know how we send each other a little something when one of us has been to a museum? I still have the Barcelona 1900 pencil you bought for me at the Van Gogh Museum, and also the little notebook with the Klimt frieze from Vienna which your handwriting designates: "for beautiful thoughts." Unfortunately, the notebook is still rather empty. I have a museum gift for you, but this time it is going to be a little bit different from what we have done earlier. I want to tell you of a special experience I have had at a museum. Actually, it is not *one* experience, it is *several* experiences. I have been to the same museum four times, and strangely enough, each time the museum had drastically changed. Kind of like what happens to Jodie Foster in "The Brave One", I don't know if you've seen it? If you haven't, you should. She is a radio-journalist who does lyrical features on the city she lives in, an action-plot plays a central role in the film, but it is also a sensitive and beautiful description of how a place may change for a person, how the same place may present itself in very different versions.

My clearest experience like that with a place is actually of Barcelona, a city I know that you also care deeply for. Barcelona shifts all the time, it is like a creature in constant metamorphosis, a chameleon whose skin changes incessantly, sand between your fingers. The light changes, shutters move up and down, facades open and close in completely unpredictable rhythms, and I swear I have experienced entire streets trade places.

Anyway – let me get back to the museum –

The first time I went to the museum it was a place for storage. Get me right, I am not talking about being behind the scenes at the museum. I am talking about the real thing, the exhibition. It was a storehouse. The space consists of an open centre lined with deposit rooms, each room closed off by huge sliding doors which can be pulled back - and as you do so, you hear the screechy sound of cheap metal wheels which run across rough concrete floors.

It is a dimly-lit space, the kind of space which rarely sees daylight, but nevertheless the air trembles with energy. Herds of little busybodies move around in the space, holding pen and paper in their hands. Occasionally they stop in front of an object, look at it, and mark it off on a paper which is clipped onto a plastic board that they hold in their hands. They look like workers intently laboring on an inventory of a collection of goods. Sometimes colleagues will approach them, step in next to the laborer, and they will both look at the board, at the papers, they point at the papers, lift their gaze, look around, talk, look at the paper again, point something out, jot down a few words,

and then they again split up. Other busybodies, a little older than the ones who move around on the floor, but still children mind you, sit or stand at computer stations; they refer back and forth between the computer and printed pieces of paper lying in front of them. They look for items on the computer and once in a while, they find what they are searching for, and then they move their attention from the display to the papers, they mark off something on the printed page, sometimes also jotting down a word or two where an empty line suggests it. When they have done this, they resume their search on the computer.

This was what it was like, the first time, I went to the museum.

The second time I arrive at the museum, it has changed entirely. The best way I can describe it is to say that it has gone from storehouse to fashion show. There is a catwalk, models and photographers, but it is a somewhat twisted fashion show. Normally at fashion shows the models move around, they do the catwalk, they occasionally pose but only for a moment, for photography. At the end of the catwalk the models stand still in an intense condensation of energy. Flashes shoot up against a background of darkness where models meet photographers. After a momentary pose the models resume their exaggerated stride across the podium, walking past the seated audience.

At the museum I found a scene which resembles the fashion show in many ways, but things are somewhat reversed, because the models on the catwalk are completely fixed, there is not really any audience, perhaps I was the audience, and where the audience normally would be, the photographers move around. They walk around the catwalk, surround the still models, look at them, stop, stand still and click. The air shivers with a rhythmic click-click-click sound. It is an electric current of pictures.

That the models stand still and the photographers move around makes me associate to a studio photo-shoot, where the model poses and waits for photography, while the photographer wavers and instructs, but at the museum the surroundings are not at all a work in progress with visible cables and moveable screens. The museum is not a studio. It is a groomed aesthetic surrounding, suitable for display.

Photographers walk around taking pictures. They don't communicate with each other. They are absorbed in their own activity, doing their own thing. And in strange ways, in recurrent moments, the photographers are also frozen in poses, not unlike the poses of the still mannequins which they take pictures of. With their arms holding cameras up in front of them, their eyes and bodies are fixated, they stand perfectly still in front of mannequins. They strike a pose for a pose.

The third time I arrive to the museum the aestethically groomed place has gone wild. I arrive at a nature reserve. There is this wonderful dim light, it is artificial, but it has the warm glow of sunset, and it changes all the time, as the light does when it is filtered through the leaves of trees blowing in the wind. It shimmers. This wonderful light is mingled with sound. Birds sing, badgers shuffle, rain trickles, you can even hear the sound of a cloud moving. Now scattered in this awesome place, all over, are animal children: small bodies clad in fur, a white polar bear, a hare with pointed ears, alert - and the lazy brown bear. They lie around on the floor, in their confine, they have a cave which they sometimes crawl into, and on top of it a plateau which they crawl up on. They sleep, lazily, but they also fight. They growl, snarl, attack each other, and sometimes they break out of their reserve and they run. They dart across the exhibition floor, down long hallways, up stretches of stairs. The exhibition is their hunting ground, they are predator and prey. They torpedo each other, and occasionally have full-blown collisions with strolling visitors. They are then escorted back into their reserve, where they again resume their activities of eating and sleeping, fighting and dying.

The last time I went to the museum, something else happened. On my previous three visits to the museum, I found that the museum changed form. It shifted from being one kind of place to another. Every time I arrived the exhibition was completely different. It was as if the exhibition unfolded itself in various appearances. Every time I had been there, the exhibition had become something new. The fourth time something even stranger happened. I arrived curious to see what the exhibition would be like this time, and when I entered into the exhibition I found, not a new version of the exhibition, but a *layered* version of the exhibition. They were all there, all three versions, layered on top of each other. Can you imagine the intensity of such a place, a place which simultaneously is a storehouse, a fashion show and a natural park? It is a turmoil of busy-bodies, clicking cameras and animal children who dart across the exhibition. The voices which sing this place are a cacophony. They don't pay much notice to each other, except for in the ruptures which occur when growling animals collide with other beings. The exhibition exists as a shimmering and intertwined hybrid. It is a mingle, an oscillation. It is a hazy flicker between information deposits, staged beauty and the warm insides of synthetic animal costumes. And then the fascinating thing which happened as I stood there taking all of this fluid and flickering in, was that I noticed that it was not only the museum which had these different forms, but that the visitors actually also changed shape right in front of my eyes. One moment a visitor may be busy moving information from a computer to a piece of paper and the next moment the same visitor is a snarling and grunting wild animal in a fierce fight for survival. One visitor may be several visitors.

When I had watched these incessant metamorphoses, change upon change, shift upon shift, for a while, I felt full. I needed some air. I shifted into the shape of a butterfly, tried to get out through the revolving doors, found it too difficult, changed back into two feet and walked out. I forgot the present for you, but I hope this account will do.

All the best, your friend.

11 Conclusion

This chapter highlights the main findings of the thesis as the invented concept mediated modes of visiting and as the rich descriptions of how visitors and portable objects associate and dissociate. The summing up of the main findings is supplemented with a discussion of the scope of the findings and with reflections in relation to practices of museum communication and education.

At the modern museum of natural history, Naturama, three types of portable objects; exercise pamphlets, mobile phone cameras and animal costumes play central roles in shaping the museum visit. Two of the portable objects, exercise pamphlets and animal costumes are offered for use by the museum, the third portable object, the mobile phone camera is used on the visitor's initiative. Each of the three portable objects associate the visitor and the exhibition in distinct ways. A characteristic *mediated mode of visiting* emerges in the association of portable objects, visitors and exhibition. In the three modes of visiting three different versions of the exhibition and the visitor are enacted. The portable objects act as mediators which transform both the visitor and the exhibition.

Mediated modes of visiting

Each portable object mediates a mode of visiting. Portable objects mediate an association between the visitor and the exhibition by mediating a pattern of action which visitors engage in. This action comes accompanied by a particular gaze and course of bodily movement. Each mode of visiting enacts a characteristic association between visitor and exhibition. When visitors meet the exhibition with exercise pamphlets, they engage in solving exercises. This activity consists of being on the hunt for information, moving it from one deposit to another. Exercise pamphlets lead children to walk around in the exhibition in a quite decisive and focused but searching manner, *or* to sit in front of a computer looking for information. Exercise pamphlets provide an optic where the exhibition is viewed for its provision of answers to exercises. Using mobile phone cameras

visitors engage in photography, they gather images which they find beautiful. The mobile phone camera brings with it a gaze for beauty, for the extraordinary. Visitors with mobile cameras walk through the exhibition, recurrently installing stops in front of desired photo objects. When visitors meet the exhibition wearing animal costumes, they engage in play activities. Costumes equip wearers with animal vision, where the exhibition and its visitors take on the form of natural habitat and prey. Animal costumes lead to children dashing around, attacking each other and other visitors.

Association and negotiation

Associations of portable objects, visitors and exhibition emerge in a negotiated manner. Multiple heterogeneous forces may either obstruct or enforce the association. Portable objects exercise influence on the museum visit, but they are also faced with a tough existential premise of negotiation. An exercise pamphlet for example is severely obstructed by a grandmother whose idea of a museum visit is *not* to be pulled around by a pamphlet. A mobile phone camera is equally severely obstructed when its holder looses interest in it and sticks it into a jeans pocket while having fun with animal costumes. The portable object mediates, translates and links, but it does not determine. It is relationally enacted. Visitors and portable objects co-constitute one another. Central forces which shape the associations which are described in the thesis are museum staff and practices, fellow visitors, other nonhuman entities, features of the portable object and the visitor.

Visitor

Each of the three portable objects depends crucially on being attractive to the visitor. Children get involved in solving exercises for various reasons: because they think it is fun, because they can get a prize for doing so, because their parents and teachers enforce pamphlets. The close relation between phones and visitors which exists already prior to the visit is central for the influence the mobile phone camera has. The phone is at hand, ready in the pocket and photography exists as a strong urge. Getting dressed in animal costumes happens both on the initiative of children and of fellow visitors, and an important force for this action is that the children may play while wearing costumes, they can step into a new way of being, behave like nonhuman animals, and they enjoy this.

Portable objects offer visitors interactivity. They provide handles of interaction: with the portable object the visitor gets a tangible access point to the

exhibition, a point of exchange where the visitor senses the exhibition by feeling it, holding its hand, being dressed in it, and furthermore, where the visitor is engaged in an activity which is perceived as enjoyable. All three portable objects offer the visitor the possibility of what, inspired by Serres, may be called joyful bodily movement. The portable objects come with a touch and do interactivity, and they offer this interactivity also as a mobile interactivity. The visitor moves with the interactivity and this transportable interactivity transforms the exhibition into a flexible and accessible touch and do space. The visitor is engaged in the exhibition in a way where body, consciousness, sense, mediation and exhibition are merged and on the move.

When visitors and portable objects act together, the visitor is mediated, transformed, translated. The visitor is an open shape, momentarily assuming form by the mediation he or she is involved in. The visitor may be engaged in multiple, mediated modes of visiting during one visit and in these multiple engagements take on various forms: busybody, photographer, animal child. The visitor shifts into a specific character in each of the three mediated modes of visiting. Portable objects create a multiple, shifting hybrid visitor.

Visitors are capable of coupling up with various entities and of participating in multiple mediated modes of visiting. Visitors embody partial identities, they are a number of potential hybrids, and they associate and dissociate with shifting aspects of the exhibition. The visitor associates to the exhibition by visiting – sensing – varying aspects of it. In these encounters the visitor takes on the form of movement, the visitor becomes a metamorphic shape shifter who incessantly forms and reforms him or herself through and in a continuous mingle with the exhibition, portable objects, exhibition media and fellow visitors. The visitor takes on the character of mixture, flicker and whirlwind. The visitor shimmers into and out of multiple engagements and their corresponding forms.

Exhibition

When it is in action each portable object with its corresponding mode of visiting creates a specific exhibition space. The exercise pamphlet creates an exhibition which resembles a storehouse, the mobile phone camera creates an exhibition which resembles a fashion show, and the animal costumes create a natural park. Each of these spaces have characteristic features. Portable objects multiply one museum exhibition into three different versions. The portable object mediates the exhibition. It transforms it, translates it, we might even say that it distorts and betrays it.

A portable object creates a specific version of the exhibition. The portable object guides the visitor along certain paths and to specific vistas. It creates imaginary walls, flooring, aisles and windows. It shapes the terrain which the visitor walks on, inserts stops at specific locations, creates paths and passageways, it frames some sights and conceals others, and in this way it shapes the visit. When it is in action the portable object is a space-builder, a time shuttle and a narrative device. It tells its own story, makes a specific time-space and conjures a visitor which fits.

The museum visit

Each mode of visiting has its own order, its inherent elements of purpose and intention and the different modes of visiting are layered on top of each other in temporally coexisting enactments. A visitor may both be wearing an animal costume and be engaged in a situation of photography for example. Modes of visiting overlap, but they also interfere with each other. Visitors switch into and out of multiple mediations and also into and out of engagements with various other elements such as stationary computers, wall-mounted interactive screens, the tusk of a narwhal, and other visitors. Hybrid visitors oscillate between presence and absence.

This adds up to a museum visit consisting of multiple modes of visiting, some mediated others not. The museum visit consists of multiple modes of visiting which rub against each other in kneading movements. The visit is an emerging pattern of interference where relations are established and broken, again and again. The visit emerges as a pattern which grows out of socio-material negotiation where several forces push and pull for action. Action is unpredictable. It is an event. The interaction between portable objects, visitors and exhibition is an incessant flow of association and dissociation. When a visitor interacts with a portable object these merge in a specific mode of visiting. When the visitor shifts to another portable object, the visit changes character, both the visitor and the exhibition are enacted in another version. The museum visit consists of chains of shifting, patterns of interference, fluid turbulences and flickers between presence and absence. The visit grows out of multiple flowing and churning movements. It emerges as a specific order which grows out of multiple overlapping and interfering orders, out of continuously changing socio-material entanglements. It is an order, but a random and abrupt order, unforeseeable, created out of enforcement and obstruction, interference and shift.

The museum visit never sits still.

Action, action, action. Action is heralded as the hero of the story. Action is the discovery, the star, the event. This almost compulsory orientation towards action is also an Achilles heel, celebratory of force, movement, power, doing. Sharpen your pencil and get on the move. What about the voids? Lingering moments of waiting around and gazing into open space? What about sleep? Sunbathing? Daydreaming? Empty space and not doing? In the stories I make, voids and interstices are not desirable locations to be: everything wants in on the action. Every thing. But perhaps it is actually the contrary. Perhaps the really enjoyable spaces are the empty spaces of not being in action. Perhaps this is where beautiful thoughts, sunbathing and breathing reside.

As a symbolic tribute to non-action the next two pages are left blank.

Conceptual contribution

Using an analytical vocabulary which is inspired by ANT and post-ANT studies, the thesis shows how portable objects participate in a number of specific museum encounters. The mentioned ANT and post-ANT vocabulary and approach has proved to be useful in pointing to and analytically mounting the associations between portable objects, visitors and the exhibition at Naturama.

Latour and Serres' notion of mediation as a simultaneous link and transformation informs the inquiry in central ways because it points to and helps explore the role of portable objects in the relations between visitors and exhibition, and it inspires the idea that visitors and exhibitions may be traced as particular appearances in specific mediations. Mol and Law's concept of multiplicity and the insistence that inquiry should look into multiple, co-existing orders makes a central contribution to the inquiry because it breaks down singularity, and inspires to exploring more than one emergent pattern. Multiple orders may coexist, and this tags along with an attention towards how multiple orders relate, and with the notions of overlap and interference. These notions are central inspirations for exploring the interference between mediated modes of visiting, and for the suggestion that some of these interferences may be understood as shifting.

The related but not congruent writings of Latour, Mol, Law, Michael and their common inspiration in the work of Serres, provide analytical room for movement which has resulted in promiscuous combinations of analytical concepts. The most significant results are the notion of mediated modes of visiting which conceptually combines the work of Serres, Latour and Law, and the notion of shifting as a form of interference between modes of visiting - a conceptual combination of Latour, Law and Mol.

The thesis proposes a new concept; that of mediated modes of visiting. A mediated mode of visiting is a manner of visiting which emerges in the entanglements of a portable object, visitors and an exhibition. It is a recurring pattern of action which emerges in the associations of heterogeneous elements. Modes of visiting, as other enactments, are always mediated, but the terms are nevertheless combined in order to highlight the central role which the portable object is given analytically. The concept modes of visiting may also be used without being combined with mediated. A museum visit may consist of multiple modes of visiting and some of these may be mediated by portable objects.

The distinction between sender intent and visitor practice

Exclusively focusing on visitor practices directly relates to the constructivist approach to learning which predominates in museum studies. Carrying out a study in this way really is doing what Hooper-Greenhill and Hein suggest: putting the visitor centre stage and meticulously and in a somewhat myopic manner paying attention to how visitors engage with an exhibition. This marks the study as an ethnography and not a reception study. It is a way of acting out the point of view that sender intentions are not necessarily central in museum visits. This has the implication that the museum somehow loses its voice in the accounts. Instead the museum is presented as a mirror image, a reflection. It is shown as it emerges in the kaleidoscope of visitor practices.

Engaging in museum visitor practices in the fundamentally empirical way which the thesis does, draws attention to visitor activities which are not part of the museum's organized communication and didactic activities. The mobile phone mediated mode of visiting which does not receive attention from staff is highlighted, pulled in on the scene. This may be a useful contribution to a field of research and practice which is very much oriented towards informal learning. It shows that visitors make meaning in ways which the museum staff have not initiated, and it shows that visitors engage in multiple mediated forms of knowing.

The thesis focuses on visitor practices rather than on what the museum's intentions are with the exhibition. A reason for this is that it is essential to distinguish between the intent which may be built into a design, media or technology and how this entity or assemblage of entities is used in practice. This is a basic point made by Latour and colleagues: do not have preconceived understandings of that which occurs, and this is a conviction which ANT has from ethnomethodology and shares with other microsociological approaches as well as with ethnographic approaches in other study areas. The distinction between visitor and sender is found in media and communication studies where a sender oriented model of communication is supplemented with a receiver oriented model (Hooper-Greenhill 1995, Macdonald 2005). The distinction is present in pedagogy as the differentiation Hein makes between the goals of the educator, and the meaning making which the learner engages in (Hein 1995: 189). And it is present in organization studies, as the distinction between the difference in perspective of the organizational sender and receiver; what Pratt and Rafaeli call the sensegiver and sensemaker (Pratt & Rafaeli 2006: 284).

It is my conviction that if sender intentions such as communication, didactic or design intent were given a more central role in the study it may have had

at least two undesirable effects on the study. One, that the point of departure would have been what the museum does instead of what visitors do, and two, that an element of evaluation would have sneaked its way into the inquiry with the underlying question: do the visitors get the message? Making the distinction between intent and realized enactment is not the same as saying that evaluation should be given up - that studying media's ability to communicate according to sender's intent should be abandoned, but that has not been the goal of the thesis.

Overlooked technologies and relations between various media

The practice orientation highlights a mode of visiting which otherwise has not received much attention from museum staff, and shows that digitally mediated museum experiences do not have to be staged by museum professionals, they are already taking place, but the minute study of mediated modes of visiting makes another contribution to the field of museum studies. It widens the concept of portable technologies from the exclusive focus on digital technologies. The thesis not only draws attention to how mobile phones already mediate museum encounters, but also pulls two overlooked portable, mediating technologies to the centre by engaging analytically with exercise pamphlets and animal costumes. The thesis – in the spirit of Latour - draws attention to overlooked, mundane technologies, and gives them their share of the limelight, and with this shows that when digital handheld devices are hyped as providing radically new and spectacularly unique and innovative museum experiences, this is a bit of an overstatement.

The thesis points out that an interesting focus is found in the relations between various media – old and new. The study provides rich descriptions of the relations between the exhibition and all three portable objects, aswell as how these link to computers and signs. Michel Serres' thoughts on 'the intercommunication of message-bearing systems' as briefly touched on in the thesis is a set of ideas which it would be interesting to further engage with in exploring multiple coexisting, overlapping and interfering mediations of objects and spaces.

Criteria for judging the research

Does the research conform to the methodological rules of actor network theory? Actor network theory is not a set of rules. ANT is a set of dispositions and interests, but it is also a rejection of strong accounts, including of strong accounts of actor network theory: "The approach is not a single entity but a multiplicity", writes Law (2007: 11). Nevertheless, there are a set of theoretical and methodological convictions which implicitly and explicitly hang around in ANT/post-ANT

studies, and which this thesis adheres to. The study's point of the departure is a very ANT/post-ANTish interest in heterogeneous associations, flux as the background for order, and stability as sociomaterially enacted. Empirically studying how heterogeneous elements associate is in accordance with ANT/post-ANT, as is the goal of using the generated empirical material to craft texts which show the mediated, multiple and emergent character of social reality.

How should the quality of the research be judged when viewed from the employed theoretical position? It is remarkable that Law's book After Method really holds very little indication of what a good study is. But the challenge which Law poses to social science research is the challenge of creating social science texts which show slippery, indistinct, elusive, complex, diffuse, messy, textured, vague, unspecific, confused, disorderly, emotional, mundane, sliding and unpredictable aspects of social reality.

Law critically engages with the singular form of knowing which is enacted in social science research, and suggests that there are multiple forms of knowing and that knowing among other things may emerge as embodiment and emotional apprehension.

The relationship between knowledge and form– how knowledge is constituted by the form it is enacted in – is a strong underlying interest of the thesis. Knowing can not be separated from the form, the materials, the genre, it is developed in. In terms of writing this means that the employed genre sets the tone for the content, as do employed tropes. Content and form are intertwined. The materials and genres which knowing is developed in are constitutive. They distort – transform, translate. Different materials and genres mediate different forms of knowing. Although Law does not want to set out a particular set of methods, the challenge he poses is that research should find methods and forms of representation which fit the topic of research. This is one criterion for judging the research: do the methods and forms of writing fit the topic?

Latour is more instructive than Law is. "A good ANT account is a narrative or a description or a proposition where all the actors do something and don't just sit there." (Latour 2005: 128) According to Latour a good account is one which engages with translations, which treats actors as mediators, and shows the complexity of forces which are involved in making action occur: "A text, in our definition of social science, is thus a test of how many actors the writer is able to treat as mediators and how far he or she is able to achieve the social." (Latour 2005:128) - and here it might serve to point out that the social is 'a circulating entity', that which is stabilized – in the present inquiry: the museum visit. Accor-

ding to Latour, a social science account should be measured by its sensibility to the heterogeneous and distributed character of agency. This is another criterion for judging the research: is it sensitive to the heterogeneous and distributed character of agency?

And the last criterion I would like to mention is to reinvoke what was written on how to judge the quality of social science narratives in chapter five, the methods section, namely: is it relevant, interesting, beautiful?

Generalizablity

If we step out of the ANT/post-ANT position, a question which may be asked of the study is; what is the scope of the research, is it relevant for other sites than the studied one? A case study may be contemplated in terms of its analytical generalization and this entails reflection about to which degree the findings of the study may be indicative for expected findings in another study (Neergaard 2007: 51). The findings of this study can not be directly transferred to other sites or interactions, and the findings are not empirically valid for all visitors, but I would argue that the concept mediated modes of visiting may be of use in understanding the mediated character of other museum visits than the ones at Naturama and that the concept may be of interest also if moved out of the museum to other experience, leisure and tourist sites. I suggest that the concept of mediated modes of visiting and the idea that portable objects mediate people's encounters with a site may be useful for exploring material mediation in urban and natural landscapes and with various sorts of portable objects. Aspects which I would expect to find analytically generalizable are: the notion that portable objects mediate associations between visitors and a site; that portable objects mediate characteristic enactments of the visitor and the site; that visits consist of multiple modes of visiting; and that visitors are capable of shifting into and out of several modes of visiting. An aspect which would be different, of course, is the content of the produced enactment, and the specific negotiations about action.

Reflections in relation to museum practice

Below follow some ideas concerning museum communication and educational activities which take their point of departure in the thesis. The main idea which the thesis offers to museum practice is that portable objects may be used in multiple ways to stage inspiring and imaginative encounters between visitors and the exhibition. Visitors with portable objects already enact multiple exhibition spaces, but the museum may engage more actively in these mediations. The museum may

make minor but important alterations to the existing portable objects in order to improve their use-value in relation to visitor practices, it may take the hand that is extended by mobile phone users and offer interactions which make use of this technology, and may use all three portable objects to stage the exhibition in multiple ways, narratively augmenting the exhibition space.

Build flexibility into pamphlets and costumes

The museum may make minor but important alterations to the existing portable objects. Based on the observations of how pamphlets and costumes are used by visitors, a suggestion which may be made for both of them is that the museum might build more flexibility into them.

Design animal costumes to fit more age groups: If boys age 11 think it is fun to get dressed in costumes, why then not provide costumes which fit them? This is a very simple point, but it makes a considerable difference for them. Fewer costumes will be torn thus reducing the need for repairing costumes, and the boys are allowed to play.

Create more flexible fits between pamphlets and the exhibition and give visitors a better possibility for tailoring their own pamphlet tour: Each question in a pamphlet may figure in both an easy and a difficult version in the same pamphlet. This builds in flexibility in relation to which age groups may be involved in one pamphlet, and reduces negotiations about which pamphlet to engage with on family visits. This may also make it possible for the visitor to choose the question which he or she wants to answer for a specific animal and provides the advantage that if for some reason it is difficult to find the answer for a question (for example because of a flaw or inconsistency in the relations between questions and answers), it becomes possible to solve the exercise nevertheless, by answering another question. This would reduce the risk that the information architecture itself becomes the focus and the challenge to be tackled. Multiple versions of a question give the visitor the option of handling flaws in the relations between questions and answers by solving another related exercise instead of spending frustrated energy on not finding an answer.

Building flexibility into the pamphlet in the form of multiplicity involves contemplating the visitor as a co-actor or playmate rather than as somebody to be instructed. According to the constructivist approaches to learning, which predominate in museum research, the museum should be contemplated as a place for learning rather than as a place for teaching, and learning does not emerge through a transmission of information where facts are poured into visitor heads.

The museum is not a school. It is a place for inspiration and imagination where the museum visitor in various ways actively and creatively makes meaning and builds knowledge. Visitors make connections between pamphlets and information deposits by engaging with museum information, signs and materials and the museum should facilitate this activity in the best possible ways.

Departing from the idea that visitors are empty containers who lack knowledge and moving focus to how visitors in their specific interactions with the museum make meaning and enact various forms of knowing, lays the ground for the suggestion that the museum may engage more heartily in all three portable objects. In all three of the mediated modes of visiting children and their fellow visitors are engaged in themes which relate to the museum theme. They all engage the visitor in the world of animals, and as such are in accordance with the overall purpose of the museum.

Augment space

There is a considerable, unused potential for staging the permanent exhibition with portable objects. Portable objects may mediate various enactments and add multiple narrative layers to the existing exhibition. They may augment the exhibition space, creating hybrid, mixed media realities, where they provide narrative layers to the exhibition and in this way amplify the space. In contemporary usage, the term augmented space is frequently related to digital technologies, but it does not have to be. All three portable objects augment space and the museum may engage further in these space-building activities.

Pamphlets may be used to stage dialogues with the exhibition which are not only biology-as-fact oriented. The format of the pamphlet could easily be used for offering activities which hold more elaborate and imaginative narratives. The animals may be staged in terms of aesthetics, mythology, fairy tale and also more explicitly in accounts where children's everyday culture is bridged with the exhibition. An example of this: At the moment there is a fad circulating among boys around the age of 6: small plastic figures called 'Gomiti' which come accompanied with playing cards, a character and their particular way of belonging to the land of Gorm. These figures draw heavily on nature and natural elements. A pamphlet tour may be devised which interweaves the imaginary world of the Gomiti's and the fabulous world of the exhibited animals. The museum visit is a point of exchange between visitors and museum and this implies that museum communication practices may experiment with engaging in the everyday life of their visitors.

Mobile phone cameras may be used to organize photo safaris where children use their mobile phones to catch animals. The phone camera may borrow the element of treasure hunt which children like about exercise pamphlets in the launch of a hunt where children are asked to gather images of animals: Catch predators. Or mammals. Or animals which live both in the sea and on land. A gathering of images may also be staged which echoes what children already do: Take picture of the five animals which you find most impressive.

Furthermore, the mobile phone camera may be used for its multiple functions. The financially demanding version of this is to develop activities which make use of the mobile phone's location sensitivity to create hybrid reality information provision or activities such as games. There are various possibilities also of extending the museums' presence outside of its physical location, for example in the form of games or guided tours which take place in a wider urban or landscape setting. The mobile phone may also be used to extend the contact with the visitor outside of the museum via information: visitors may sign up to receive mobile phone text messages about what a particularly interesting animal does at this time of the year, for example: 'at this time of year the polar bear has its kin'. Or pictures of new exhibits may be sent to visitors who sign up for such a service.

A less costly but still innovative use of the mobile phone camera is to use it for one of its other functions at the museum. The mobile phone holds the possibility of acting as a camera which is useful for gathering images, but it also holds the possibility of acting as a Dictaphone where children in organized didactic activities for example could creatively engage in exhibited animals by giving voice to them in imagined narratives or dramas which focus on the life of animals. In this way the mobile phone camera may mediate a narrative staging of animals where the visitor speaks on behalf of the animal.

Last but not least, the museum may engage more actively in visitor's use of animal costumes, for example by organizing enactment activities, as is done by other museums. Visitors already perform natural history through the activities which emerge when children wear costumes, but the museum may engage in these performances and for example contribute with more elaborate plots which have specific didactic intents.

The museum visit is a rich pattern of interference and exchange where the visitor engages with the exhibition in multiple ways. Portable objects may mediate multifaceted, inspirational exhibition spaces.

BCN
iS
DEAD
groovin
CURSOS DE ESPAÑOL
WILD
PAINTING
PARTY

Epilogue

Another place

The man walks through the city. It is a raw city. Edgy. He sees it. He gathers images. With the images he crafts politics, oppression, repression, revolt.

Only dead fish go with the stream.

.com/badlucksto

He walks the city with split awareness. He is a father. He sees the city through the eyes of a three year old. Where is the zoo? Where can we go play?

“Daddy, there’s a dino.
“Take a picture of the dino.”

“Yeah and a cow. Have you seen the cow?
“Up there, look. Do you see it?”

They are together most of the time. She is at home or at the University, working. When the boy is with him he walks the city at the pace of a three year old. Slow, so slow. They get a stroller. The two of them stroll the streets together. They can carry food and water in the stroller, and when the boy's legs get tired he can sit in it. His Achilles tendons are short, he gets tired quickly. As their time passes in Barcelona, the boy starts participating. From his seated position he spots images. He knows what his father looks for, more or less. He points them out. "There is one for a picture."

The man uploads the images to facebook, to a folder he calls "Graphics and stuff" with the subtext: "...because fonts, graffiti and stuff like that are cool…". During the three months in Barcelona he creates three such folders. The two next ones are called "Graphics and stuff #2" and "Graphics and stuff #3". The folders contain 156 images. One of the folders has the subtitle "More street-art from Barcelona".

He also creates other folders "Barca-tour 1, 2, and 3". 120 family pictures, tourist images. He takes pictures of the woman and the boy. Pictures for memory, to share and show. He takes pictures of them in special places, funny situations. The boy and the woman at carnival, riding the tram to Tibidabo, the beach, their favourite restaurant, their flat. A few images of himself and the boy.

Sometimes, when they are all together, the man sees the city through her eyes. He sees Gaudí, gold and glitter. With her eyes he looks up. Notices the light. She splashes in it.

He enjoys being there with them. He hangs around with the boy. Eats at her favourite tapas place. Again and again makes conversation about the wonders of the Catalan modernista movement. When he is with them, he has triple eyes. He sees traffic and conversation. Candy and sculptures. He has variegated vision.

His eye consists of several eyes.

MYSELF///
RIGHT HERE
IN BARCELONA

He stops.

They stop.

He takes a picture.

When he walks alone he is focused. He sees with his own eyes, he looks straight ahead. He does not raise his head toward the sky. He looks at eye level. He does not look for dinos. He looks around corners. He looks at doors, at shutters, metal frames, poles. When he is alone, he clicks them in. Rapidly. Gathers them in rich amounts, puts them in his pocket.

One day he meets a wolf. It snarls, reveals its fangs, glares at him. They stand eye to eye. The wolf stands still, four feet on the ground it strikes a pose. He stands still. Two feet on the ground he takes a picture. He takes it in.

He knows this kind of creature. His hands know it. He knows the fur, the feel, from the inside, from the outside. He knows how to release the skin from muscle tissue. It doesn't bleed when you do it. Of course there is blood. But then you have talcum. You just put on a little talcum, and the blood is no problem. There really isn't very much blood. You take out the body, muscles, tissue. Skeleton. Not all of the skeleton, you have to leave the visible parts. The paws for instance. You saw them off. Separate the body from the visible parts. Take the body out. Scrape the tissue off the parts that you have to leave in there, and then you insert a frame, a plastic dummy. They come in shapes that fit. Before – in the old days – they used to fill them up with wool wood. They don't do that any more. Now it's plastic. You put it inside and model the skin onto it. The difficult part is always the eyes. Glass eyes.

She sees the image on his phone. She likes it.

Later she finds the image on his facebook profile. She steals the image from him.

I find the city magic. It changes all the time. It transforms itself. It is a morphing city. I walk down a street, into an alley, I thought I had been there before. I expected flashy windows, items on display and open doors. Now it is dark facades dressed in graffiti-painted shutters. Right around the corner there is bleep and blink. But for no apparent reason at all, this alley has surrendered to another form. It is dark, quiet, peaceful.

The shuttering up and down takes place in an uncoordinated rhythm, a rhythm I can't figure. The facades, the alleys, they live their own life, they dance their own dance between display and street-smart resistance, unpredictable appearance and disappearance.

I plunge into the city, never knowing what I'll find, I keep my head up high as I walk through a mechanical landscape of shutters, hoisted or let go, stumble across a square with hot gathering and music, and all of a sudden - again I am surrounded by solid walls and damp darkness. I stand face to face with a snarling wolf.

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Epilogue images: Ivan Kruse Jensen

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Appendix

Chronology fieldwork at Naturama

	Date	Method, location	Data	
#	16.04.08	Observation, exhibition	Video 13	5th grade class
	16.04.08	Observation, exhibition	Video 13	4th grade class
	16.04.08	Observation, exhibition	Video 13	2nd grade class
	16.04.08	Observation, exhibition	Video 13	Kindergarten, among others Lykke and Viktor and a dinosaur, a polar bear and a brown bear
	16.04.08	Interview, exhibition	Video 13	4th grade teacher
	16.04.08	Interview, exhibition	Video 13	Female (12) Female (10)
	16.04.08	Interview, exhibition	Video 13	Female (12) Female (11)
	16.04.08	Interview, exhibition	Video 13	Female (10) Female (11) Female (11) Female (11) Female (11)
	16.04.08	Interview, exhibition	Video 13	Female (12) Female (12)
	16.04.08	Interview, exhibition	Video 13	Male (12) Male (11)
	16.04.08	Interview, exhibition	Video 13	Kindergarten teacher, Rose
#	02.04.08	Observation, exhibition		

#	27.03.08	Observation, exhibition	Video 12	2nd grade class, among others Louise, Emma and Paul
	27.03.08	Interview, exhibition	Video 12	Female (9), Louise Female (9), Emma Male (9), Paul
	27.03.08	Interview, exhibition	Video 12	Female (9) Female (9) Female (9)
	27.03.08	Interview, exhibition	Video 12	Male (9) Male (9)
	27.03.08	Interview, exhibition	Video 12	2nd grade teachers Joachim Sofie
	19.03.08	Interview, exhibition	Video 11	Female (12)
#	19.03.08	Observation, exhibition	Video 10	Family of 4 Female (adult) Female (12), Laura Male (8) Female (4)
	19.03.08	Interview, exhibition	Video 10	Staff: Nature Guide

	19.03.08	Observation, exhibition	Video 8	Family of five Female (adult, mother) Female (adult, grand-mother) Female (13), Sara Female (12), Ann Male (9), Johannes
	19.03.08	Obsevation, exhibition	Video 8	Family of four
	18.03.08	Interview, exhibition	Video 9	Staff: Nature Guide, Vera
#	15.03.08	Observation, exhibition Visitor wears glasses	Video 7	Family of six Female (mother) Male (father) Male (12), Anton Female (10), Bea Female (7) Female (2)
#	06.03.08	Concert, exhibition		Majbritte Ulrikkeholm
#	25.11.07	Visit with my family, solved exercises		
	23.11.07	Interview, exhibition	Video 6	Staff, Museum Manager
#	20.11.07	Observation, exhibition	Audio	
¤	20.11.07	Participant observation, offices	Audio	Meeting, selection of winner, photo contest

#	16.10.07	Observation, exhibition Visitor wears glasses	Video 5	Family of four Female (mother) Male (father) Male (10), Teis Female (7), Fie
	16.10.07	Interview, exhibition	Audio	Family of four Female (mother) Male (father) Male (10), Teis Female (7), Fie
	16.10.07	Obervation, exhibition Visitor wears glasses	Video 4	Family of two Female (Granma) Female (7), Mia
	16.10.07	Interview, exhibition	Video 4	Family of two Female (adult), Granma Female (7), Mia
	12.10.07	Interview (phone)	Audio 0036	Staff, marketing coordinator
#	06.10.07	Observation, exhibition	Audio 0013-0025	Fall vacation Various family visits

	06.10.07	Observation, exhibition	Audio 0013-0025	Family of four Female (mother) Female (grandmother) Female (13) Male (9)
	06.10.07	Interview , exhibition	Audio 0026	Female (13) Male (9)
	06.10.07	Interview, exhibition	Audio 0027	Female (mother) Female (adult friend) Male (10), Torkild
	06.10.07	Interview, exhibition	Audio 0028	Female (adult)
	06.10.07	Interview, exhibition	Audio 0029	Male (13), Sebastian Male (9)
	06.10.07	Interview, exhibition	Audio 0030 0031	Family of four Female (mother) Male (father) Male (11), Nicolai Male (10), Niclas
	06.10.07	Interview, exhibition	Audio 0032	Male (12)
#	21.09.07	Observation, exhibition		
#	20.09.07	Visit with my son, exhibition My son wears glasses	Video 3 Notes	
#	20.09.07	Observation, exhibition I wear glasses	Video 2	
#	19.09.07	Observation, exhibition Visitor wears glasses	Video 1	Male (63), Larry Male (34), John

¤	03.09.07	Meeting, participation, offices	Notes	Staff meeting about Naturama strategy
¤	27.06.07	Meeting, participation, offices		Meeting with museum manager and head of communication, researcher
¤	25.06.07	Meeting, participation, offices	Notes	
¤	20.06.07	Workshop, offices		
¤	19.06.07	Prepare workshop, offices		
	18.06.07	Interview, offices	Audio	Staff: head of communication, researcher
¤	18.06.07	Prepare workshop, offices		
	18.06.07	Meeting, offices		With museum manager
#	15.06.07	Participant observation, exhibition	Notes	
	15.06.07	Interview, offices	Audio	Staff: Nature Guide, Vera
¤	13.06.07	Participant observation / prepare workshop, offices		
¤	12.06.07	Participant observation / prepare workshop, offices		
¤	07.06.07	Participant observation / prepare workshop, offices		
#	04.06.07	Participant observation, exhibition	Photo	
	30.05.07	Interview	Audio	Museum of Natural History, Stockholm
¤	24.05.07	Participant observation, offices	Audio	Meeting, exhibition planning
#	19.05.07	Participant observation, exhibition	Photo	
¤	14.05.07	Participant observation, offices	Notes	

¤	07.05.07	Participant observation, offices	Notes	Offices Staff meeting (3hrs)
#	02.05.07	Participant observation, exhibition	Audio	Shadowing of two Nature Guides
¤	23.04.07	Participant observation, offices	Notes	Talks with marketing, management and communication responsible staff
#	19.04.07	Concert, exhibition	Notes	Eivør Pállsdottir
	19.04.07	Participant observation	Notes	Annual meeting, The Heritage Agency of Denmark under the Danish Ministry of Culture.
# ¤	18.04.07	Participant observation, exhibition and offices	Audio	Shadowing of Nature Guide
	18.04.07	Interview	Audio	Nature Guide
¤	17.04.07	Participant observation, offices	Notes	Meeting, exhibition planning
¤	13.04.07	Participant observation, offices	Notes	
¤	12.04.07	Participant observation, offices	Notes	
¤	11.04.07	Participant observation, offices	Notes	
#	08.03.07	Visit with my son, exhibition		
¤	05.03.07	Participant observation, offices	Notes	Staff meeting (3 hrs.)
	26.02.07	Initial meeting, offices		Meeting with museum manager and researcher, head of communication
	Feb. 2007	Initial contact		

Furthermore various e-mail correspondence and written material: exercise pamphlets, activity programs, website and visitor statistics provided by the museum.

Dates marked with # are counted as 21 exhibition observation days.

¤ Dates marked with ¤ are counted as 18 office observation days.