Ghost Factory: From Curating as Research to Exhibition as Curatorial Apparatus

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'How to exhibit software?' The question assumes software to be an object of curatorial concern, a thing to be shown, and one which contributes to knowledge-making practices that are part of culture that today is data-based and computational. Indeed, software and data are important contemporary objects, and they are part of curating as subjects that curate and objects that are curated. I refer to this as curating becoming posthuman (Tyżlik-Carver 2016). Posthuman curating recognises that curating is influenced by computation and that social relations are mediated by algorithmically governed social media and digital networks. In an environment where curation and software are enmeshed, exhibition-making becomes a research method for critical thinking about computational culture and it lends its format to frame an experience where computer program, originally designed to work in the computing machine, is entangled with life outside the computational systems. The problem of exhibiting software is then a curatorial question about what relations are displayed and put into motion.

To frame a problem of exhibiting software in this way is to take into account possible relations, which result on one hand from software and what it computes, and on the other from its exhibition. Indeed, exhibitions are about relations and things, objects and themes, artistic practices and audiences, public displays and institutional agendas. The function of curators is to set them up, to arrange them in an exhibition space, to research and contextualise them, to interpret and explain them and in effect to offer a framework for understanding the exhibition. Curatorially, my interest goes beyond mere exploration of practicalities of software, in other words how it works, what it is programmed to do, and beyond the execution of the code "as a straightforward running of the task" (Pritchard, Snodgrass, Tyżlik-Carver 2018: 9). Questions about what happens when algorithms are executed can give only partially an idea of what software is and what it does. Exhibiting software contextualises it conceptually and affectively displays situations of control, where algorithms perform on and with bodies and things, in time and place as objects/subjects that produce and modulate relations. Exhibition of software is concerned with how what we know about it is made public. In the context of this volume which explores curatorial learning spaces as sites for knowledge production understood as spacial, media and social practice, I propose that curating software and data is also a practice of researching them, and as a result it is a method for investigating digital and computational culture curatorially. In other words, to exhibit software is to use the curatorial site, such as an exhibition, as a site for construction of knowledge; a method of research and a space for material presentation of computational artefacts such as software and data.

Ghost Factory was an experiment to think with this question how to curate but also how to collect, present and distribute artefacts that do not function as two or three dimensional objects that can be neatly displayed on a plinth or in a frame but which are part of complex computational systems. It was a curatorial and research project and a series of installations in Cornwall, UK and Aarhus, Denmark between 2013 and 2018, instigated to display *Ghost Machine* (2012), a MaxMSP based application developed by sound artist, researcher and educator Andrew Prior and myself as our contribution to the publication *Local Colour: Ghosts, variations* (Beaulieu, Stahl, Lindh 2012). The work clarifies the key issues connected to curatorial inquiry into computational culture, namely that *Ghost Factory* is a form of curating software and data – its aim is not just to exhibit objects and represent relations, but to simulate and enact them opening to emerging perceptions and other phenomena computational or otherwise. At the same time *Ghost Factory* is presented here as an example of a curatorial research site, open to public where computational culture and related elements are studied and experienced. This exhibition is a research apparatus, an environment for affective learning, a site for perceiving, sensing, understanding and trying out objects of computational culture differently.

Curating and Computation

The project of exhibiting software is an inquiry into relations between the curatorial and computational, between curating and computing. Such an undertaking assumes an expanded understanding of curating that takes place beyond the gallery and museum

walls, and where curating is about curating digital objects, their selection, preservation, maintenance, collection and archiving. Digital curation defines practices outside of what curating means for art professionals, and it is usually associated with digital methods which include management of data and its processing. In other words it concerns what and how librarians, scientists, scholars, social media professionals and others do with data. For example content curation, a form of curating taking place on many social media platforms and often promoted by them, is the result of selecting, reposting and other forms of content organisation performed by platform users and by professional content curators. All this data and metadata is continuously generated through processes of digitisation where books, photographs, artworks and documents are scanned and formatted as digital objects ready for tagging, classification, and organisation into databases for quick access and retrieval. Objects are modified while becoming digital and forms of curatorship change reflecting the materiality of digital things.

What I refer to as posthuman curating is the theoretical framework with which to understand this expanded curatorial field (Tyżlik-Carver 2016). Prosumers/produsers (Bruns 2008; Toffler 1984) responsible for usergenerated content have all been mobilized through mass participation in the digital economy as consumers, users, producers and content curators who operate in the field of big data and whose function is to (re)produce much wider patterns of taste, information and affect. Contemporary curatorial gestures and practices manifest as subjective decisions to upload or not, to follow or not, to like or not, and at the same time they involve data tracking, capture and processing, regularly performed by algorithms. Data is captured as interactions with such digital objects are generated, recorded and stored. The 'born digital' description refers to objects that never have been other than digital and they too receive curatorial assistance, through human or algorithmic intervention. Digital curation and curating content encompass the many practical methods and principles of curating in digital age when managing and caring for such data and digital objects is distributed across human and non-human agents.

Posthuman curating marks this process of distributing curatorial function among human and non-human actors and incorporating curating as part of computational and networked systems in form of online recommendations, personalisations, search engine optimisation and similar systems. Others have discussed curating and its relation to cybernetics (Krysa 2008), considered it an art platform that organises creativity (Goriunova 2012), while in the context of archival practices and art conservation the changing materiality of art objects accounts for the fact that born digital practices and objects of net art are "constructed and evolve[s] over time" (Dekker 2018). Each of these contributions engages with expanded understanding of curating as conditioned by media specificity and defined by networked technologies recognising that objects and practices of making, collecting, exhibiting and preserving are highly complex in computational culture. As curating became posthuman, it is necessary to consider computing and curating side by side. Each is a technique and a particular method of managing objects and people through archives, exhibitions or databases, all are formats which organise what we know about the world in specific technological, cultural or aesthetic environments. Elsewhere I have defined curating as a form of technology and, among other things, an organisational practice concerned with managing, categorising and tagging of information, data and concepts (Tyżlik-Carver 2016: 9), and that it is about creating, managing and distributing content and data over networks that also take a form of self-curation (Tyżlik-Carver 2018). As curating and computation are closely intertwined they mutually affect and are affected by each other materially and conceptually.

Exploring curation and computing together might reveal something about the other while also showing how curating can be a method to research computational phenomena. Both are invested in forms of organising that generate narratives and patterns, methods and techniques that are used to explain and organise knowledge about the world. Beatrice Fazi and Matthew Fuller define computation as "a method and a force of organization, quantification and rationalization of reality by logico-mathematical means" (2016: 281). To organise reality computationally is to make it discrete by representing it with numbers, digits, data, algorithms, which count and can be counted into new models, visualisations and other computational constructions. To compute is to abstract through quantifying and modelling; and, in Fazi and Fuller's extension, it is to organise "abstract objects and procedures into expressions that can (but also may not) be thought of, perceived, and carried out" (2016: 283). I read the insertion (in parenthesis) in the preceding sentence as referring to contingency, a condition that is defined by uncertainty and indeterminacy and as such not desired in any system, curatorial, computational or otherwise, where control and precision of execution is of high value.

While curating and computing model how knowledge is organised in their respective disciplines and related practices, it is helpful to look closely at their formal features. For example, computational processes organise how data and information are managed by employing formal logic to sort discrete relations: output is the result of what has been put into the system suggesting that computa-

tion represents what is in the world while testing and simulating what could be. The ubiquitous and basic if/then statement is one example of a syntax which can model things and relations when certain conditions are true:

if (condition) { statement1

} else {

statement2

}

Information is organised into logical process where if certain conditions are fulfilled something (statement 1) will happen, otherwise something else (statement 2) will happen, or not, as the else clause can ramain empty. Computer can execute such a statement producing a model for each. Abstraction is crucial to this process because conditions and statements have to be defined so they are readable by the machine and thus they follow logical and mathematical rules for statements and conditions. Formal logic of computation, of which if/then statement is only one simple example of a binary model, is linked to the requirement that digital form of organising that computers perform has to deal with discrete forms: algorithms and data.

Descrete models aid determinacy in computation but how does determinacy in computation affect curating which normally deals with continuity of art and its perception as part of life? As it is performed by software or combination of people and software the focus of curating is not just its objects and their display but also experiences and sensations formalised in an art form and provoked by it. However, Fazi in her article on digital aesthetics problematises the somewhat binary logic at work when discreteness is taken to qualify the digital and where continuity is the feature of aesthetics (Fazi 2019: 4). She recognises the impasse in digital aesthetics that concerns “the difficulty to attributing those perceptual and relational features” usually of interest to aesthetic enquiry “to the informational and operational mechanisms of the computer of the digital device” (Fazi 2019: 4). Her provocation is to address computation itself in aesthetic terms and oppose “a mode of organization that is said to be aesthetically primary, because it pertains to the qualitative features that belong to the perception and receptivity of lived experience” to “an alternative structuring, which is dictated by digital technologies’ quantitative modes of formal organization” (2019: 4). I want to use Fazi’s provocation as a cue to analyse exhibition-making as an example of curating and computing coming together in the process of modelling and simulating executed curatorially. Thus my interest is to test if and how it might be possible to address computation through curating software and data. In the section below I present the collaborative artwork *Ghost Factory* as an example of how curating and computing can be brought together into illustrative conjunction.

Ghost Machine

Ghost Machine is the software at the centre of *Ghost Factory*.[1] This computer-based application was originally created to perform a simple operation: a translation of one form of data into another. In this case it converts red, green, blue (RGB) colour values into amplitudes creating audio-visual files characterised by their glitchy and ghostly aesthetics [Fig. 1]. The very first result of using *Ghost Machine* was the film by Andrew Prior (2012) [Fig. 3] under the same title, which used as its source data the conceptual novel *Local Colour* by Derek Beaulieu (2008).

In fact, it was the invitation to remix *Local Colour* [Fig. 2] that inspired creation of *Ghost Machine*. *Local Colour* is itself a remediation, a page-by-page interpretation of Paul Auster’s novella *Ghosts* (1987). Colours are present throughout Auster’s story in names of characters White, Blue, Black, Green and so on, revealing the importance of colour for the narrative. In the book’s reinterpretation by Beaulieu all chromatic words are replaced with blocks of colours while the rest of the text is erased in its entirety and leaving only coloured rectangular shapes across all 72 pages. Beaulieu’s interpretation of Auster’s text applies concrete poetry techniques and conceptual writing to abandon the narrative and instead focus on specific words and their materiality. In this case, meaning of the words is perfectly denoted with a colour which is plotted on the pages allowing for opening the text to multiple interpretations and many variations of reading.

ABBIDLUNG Fig. 1

Ghost Machine is an application that goes to the next level and remediates remediation. This constant translation and sense making through many stages of mediating, remediating and remediating some more provokes a number of questions about processes and objects involved: What is left of information when it moves endlessly between media, bodies and locations?

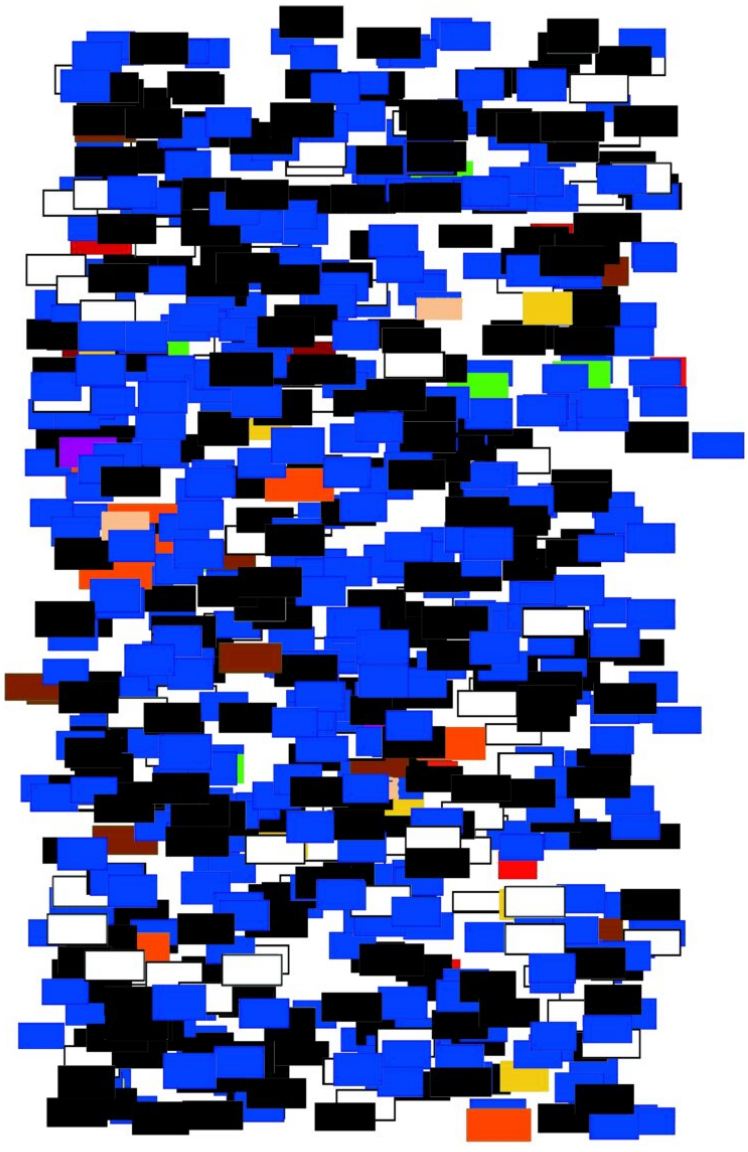

Fig. 2: From Local Colour by Derek Beaulieu

Where is the original message? And what is the original message? Beaulieu's original translation of the text into blocks of colours across otherwise empty pages exhibits certain digital aesthetic which could be also formally coded into if/then statement. The pseudocode below explains one way how Local Colour could be executed by a computer where some of the words removed by Beaulieu are brought back as blocs of colour:

forEach word in text { if (word == „Blue“) {

drawRectangle(color = blue)

} else if (word == „White“) { drawRectangle(color = white)

} else if (word == „Black“) { drawRectangle(color = black)

} else if (word == „Brown“) { drawRectangle(color = brown)

} else { skip

}

}

This snippet of code explains algorithm in which each colour word is to be printed as a selected specific colour block whereas every other word is simply omitted and does not end on the page.[2] Words, language, colours, numbers, computer language, formats of information are materially bounded to its medium be it paper, computer or a human mind. It is not surprising that each medium comes with own materials, tools, formats and practices. However, when looking at them up close allows to see intra-actions between data, language, forms and experiences as discrete yet dynamic phenomena whose properties materialize through the process of intra-acting (Barad 2007). When responding to the original invitation we engaged in the process of non/sense making out text that had been turned into a form of data. We ended up with *Ghost Machine*, a program that processes this data as it reads RGB colour codes which are input for an algorithm that generates images and sounds that are recorded and saved as .mov files. The film *Ghost Machine* (2012) by Andrew Prior is a human and machine reading of Beaulieu's book where text is translated into sounds and images that are recorder and saved as .mov.files. The resulting film, together with the code, technical ReadMe file, and accompanied by a poem *Invocation of Contingent Others* are captured on a CD and included as part of the publication *Local Colour: Ghosts, Variations* (Beaulieu, Stahl, Lindh 2012) together with contributions from other artists and writers.

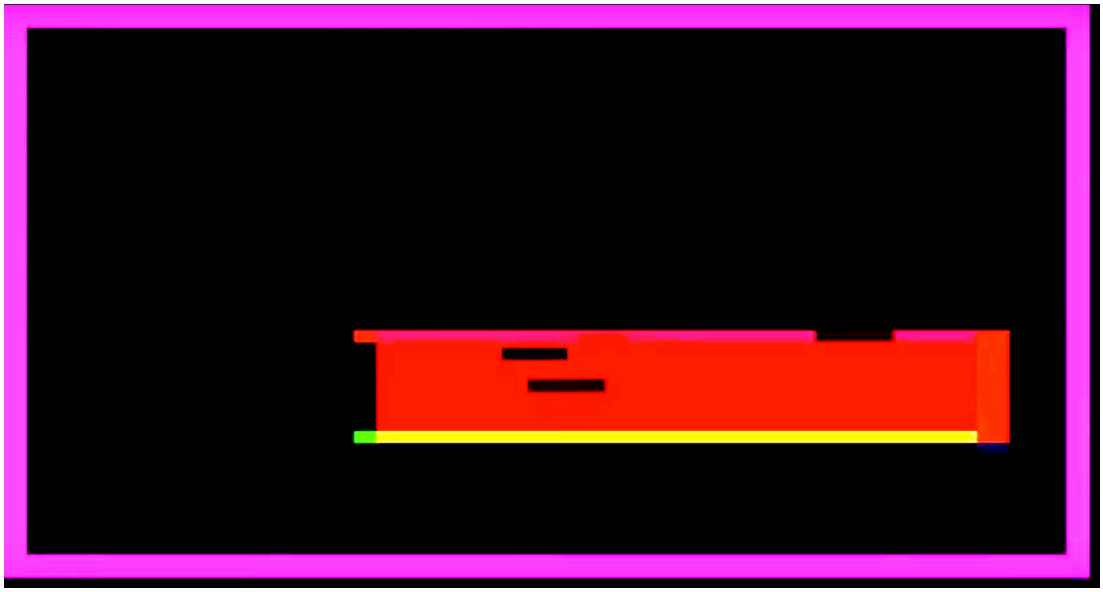

Fig. 3: Andrew Prior: Ghost Machine (2012), video 9:38, screencapture (2012).

This excessive mode of reading opened by Beaulieu's reinterpretation of Auster's text is a useful reminder that multiple ways of reading are always possible, showing indeterminacy to be a productive force even when computational systems are involved.[3] Creative potentials are inscribed at every level of making things and creating meanings and *Ghost Machine* builds on this creative potential and at the same time asks: so what? And why this multitude of relations and connections that can be made? The ambiguity of creative operation here hangs between the continuity and discreteness, in other words it is performed as a result of so called lived experience and as a part of an automated process. *Ghost Factory* slows down this process of translations and remediations that *Ghost Machine* performs, to extract complex and nuanced computational events into events formalised as curatorial where re/constructions of meanings are performed again, modelling differently not just the results but the very environment of translation.

Ghost Factory – A Working Exhibition

Ghost Factory is the curatorial site [Fig. 4] prepared for the event where the *Ghost Machine* software performs together with its human and non-human others, not in an attempt to show mathematical precision in which binary systems are executed, but to inquire into less predictable elements of the computational systems and those that are included in it as data and statistics. *Ghost Factory* is the space opened to human bodies and bodies of data. And it is a site for learning affectively how they come together as part of contemporary computational culture. Yet, *Ghost Factory* does not just display how human and computer interactions happen, but it generates the conditions in which humans make data in a creative endeavour facilitated by *Ghost Machine*.

Fig. 4: Ghost Factory: a working exhibition (2013). Exhibition view.

In the first instance *Ghost Factory* was installed over two days in March 2013 in the CMR, an artistled project space in post-industrial town of Redruth in Cornwall. The exhibition presented localised versions of all the elements of software in the gallery. The first room in the *Ghost Factory* was completely dark and empty, filled only with audio version of the poem *Invocation of Contingent Others*.[4] If visitors entered this black box room they would hear a recording of voices reading the poem and electric cracks and noises, a residue of data in audio format. Upstairs *Ghost Machine* video was projected in a dedicated room and the rest of the floor was occupied by the installation of the *Ghost Machine* with its related documents. Two computers were made available so it was possible to experiment with the machine, remix data and add it to the online gallery archive. The poem *Invocation of Contingent Others* and the ReadMe file were also projected on the walls with over-head projectors and sound version could be accessed with headphones.

Different systems of knowledge and information are included in the installation alongside each other and the exhibition intensifies their entanglements. Visitors read and experience different parts of *Ghost Machine* to make sense of the arrangement of images and sounds and applications and in the process they inquire through their own making. At the same time visitors become operative as part of informational system inputting data, playing with application and generating new information while being captured by systems that organise bodies as data. The invitation to attend the exhibition was situated in relation to the wider context of participation and sharing online which have been appropriated as part of automated processes that fuels extractive logic of platforms. Mass participation in and constant engagement with digital technologies make things and people more connected and networked while radically changing and generating new practices. Personal and intimate ways of making, distributing, managing or consuming content are intricately entangled with big data processes, attention economy, platform capitalism and computation. They regularly incorporate play and labour, fun and obligation to perform a task as they seamlessly interweave with each other. *Ghost Factory* carves out space and time where the entanglements of systems of labour, information and knowledge are affectively embodied and embedded as a context for the exhibition and its subjects/objects.

The description of *Ghost Factory* as a “working exhibition” played to this as the audience was invited to do the work and remediate files with use of *Ghost Machine* software:

We invite all workers to bring their own pdf files, and small quicktime movies ready for remediation. The aim is to produce own ghosts. You are invited to save your attempts as .mov files during the production process and take them home. You will need your own usb stick to save and transport them home. If so inclined, you can release your ghosts by posting your film on vimeo or YouTube or similar and send the links to Ghost Factory[**]. This is a voluntary work experience and there is considerable doubt it will be of any use in this life or thereafter. (Tyżlik-Carver 2013)

Remediation here is an ambiguous act of production: one kind of data is translated into another, input becomes output. Algorithmic manipulation, altered by user intervention generates noise and glissando of sine waves in response to the feed provided by users themselves. People become users become audience become workers whose labour is to input data into the machine to generate films with *Ghost Machine* software. As they create the material for the first collection in the *Ghost Factory* gallery they are groomed to produce data for the video sharing platforms. On the one hand the software facilitates creative making, a process which gives pleasure, excitement and stimulates intellectually. Conversations between those who use *Ghost Machine* in the gallery start naturally as they reflect on the process. At the same time the value of this voluntary work experience is questioned. Ambiguity is always present and value of participation is doubted not as cynical curatorial gesture but in order to “stay with the trouble” (Haraway 2010) and account for the forms of exploitation online where engagement with yet another software is about creation of more data as content and statistics.

Creativity managed by technology is often considered to be a result of ‘empowering’ potential that technologies bring allowing masses to release their imagination and creativity now. This technological machinery arranges creativity as a process, distributed and shared across human and non-human others and not confined to the creative powers of an artist genius while also extracting its value through automation. The second exhibition of *Ghost Factory* two years later, amplified this performative character of automation by organising it as an audio-visual factory for the networked culture [Fig. 5]. Installed as part of conference on popular music the exhibition room hosted a production process where conference participants were invited to feed pdf versions of their

conference talks and presentations through the Ghost Machine. This working gallery was a location for remediation of research into glitched videos and their distribution as part of popular culture that can be accessed through social media platforms, and displayed in the exhibition.[5] If the economics of pop music have imploded, it is because it conforms to the flows and conditions of disembodied information. Consumers and producers alike sit side by side in the digital factory and they generate more and more content and more and more data. This exhibition aimed to reveal many of the elements of such systems, the black, white and grey zones in which users operate, the sleek machines and the DIY interfaces, the factory and playground of digital labour, and the cloud in which it is stored as a ghostly presence. Creativity, however, is neither the exclusive realm of the artistic genius, nor encoded in prosumer software applications that over-determine and control the output. As part of platform capitalism, creativity is mundane and rigid, organised as digital bureaucracy. And, it is also a ghost, a play of absence and presence woven into the factory as a playground for general intellect.

In one sense *Ghost Factory* follows the formula of exhibition-making; objects are displayed in the gallery space within the timeframe of an exhibition and social interactions are organised around them. At the same time *Ghost Factory* as exhibition environment expands beyond this usual arrangement. If *Ghost Machine* is the software, then *Ghost Factory* is its curatorial environment, a curatorial platform on which to run *Ghost Machine* as aesthetico-computational element intra-acting socially and culturally. This is a curatorial apparatus that facilitates creation of data as part of the exhibition narrative networked with platform capitalism. *Ghost Factory* shows what and how is executed: one form of data becomes another, different bodies, including humans, are accounted for as part of the collection of films and as part of big data generated through interactions with social media. *Ghost Factory* as a curatorial experiment translates the application into exhibition as multimedia experience shared by people, machines and software. Its focus is to generate perception of data as data sensing environment where humans and nonhumans perform together in always complex and ambiguous relations that include pleasure of creation and technological determinism of exploitation. *Ghost Factory* is a working exhibition because the learning is performative and situated, a curatorial apparatus of elements in relations.


communism

Fig. 5: Ghost Factory: performative exhibition with humans and machines (2015). Exhibition view.

Curatorial Apparatus

To exhibit software is to exhibit how software is part of contemporary life. This is a complex task that requires curatorial models which stay close to the performative character of software and life and how they are interwoven. And so exhibition of software has to perform these relations. This performative mode in which exhibited things and their audiences enact exhibitions' relations materially, conceptually, discursively and affectively could be referred to, after Irit Rogoff, as "the event of knowledge" (Bismarck/Rogoff 2012: 29) formalised by what it shows, how it shows it and the audience's response. But it is also an event itself defined by contingency of such relations, here organised curatorially, and as such it is a phenomenon producing new phenomena; not just representing things but enacting relations, exhibition as a *curatorial apparatus*. People produce data with *Ghost Machine*, they produce content, upload it to the platform interacting with complex systems of big data. In *Ghost Machine* intra-actions affective intensities are entangled with procedural logic of algorithms, systems of knowledge and information. Curating organises knowledge curatorially where exhibition is not just a display and representational form but can be seen as a curatorial simulation, an apparatus that generates the experience of how being with software is also about becoming data.

Formalising exhibition of software as curatorial apparatus for curating data expands curatorial practice beyond its epistemological enquiry recognises it as a creative practice executed with others. When I say creative, I don't mean necessarily that curating is an artistic form, but that it performs ontologically. Karen Barad's definition of apparatus is the most productive in explaining this. For Barad (2007: 142) "apparatuses are specific material reconfigurings of the world that do not merely emerge in time but iteratively reconfigure spacetimematter as part of the ongoing dynamism of becoming". This understanding of apparatuses as not just producing representations but actively constructing what is represented and how points to the relation between the conditions of observation and knowledge making practices that generate epistemological events. It is not an application of what is known to what is observed but the very making of the body of knowledge, what Barad defines as "*onto-epistemology* – the study of practices of knowing in being" (2003: 828). Exhibition as epistemological form makes knowledge statements without critically assessing how the act of curating influences what is claimed. To define exhibition as curatorial apparatus is to make a statement about its role in the process of knowledge making.

Such a curatorial apparatus is not a thing, nor a process, neither is it a social construct, but a phenomenon in process of producing new phenomena through reconfigurations, rearrangements, intra-actions and performative interventions (what Barad refers to as ‚cutting together apart' or 'agential cuts') that enact certain boundaries and exclusions. For example *Ghost Factory* abstracts objects/subjects of research (software and data) by removing them into the site of exhibition. This is not mathematical abstraction that wants to discretise indeterminacy of audience participation into data but curatorial conceptualisation of possible relations between different bodies within the space of an exhibition. Relations are displayed and enacted as they happen revealing that agency of things and bodies is not their inherent property but a dynamic force (Barad 2007: 141). An exhibition might be designed curatorially by engaging with sites, objects, histories or specific subjects to materialise research as exhibition. Following Barad's understanding of the apparatus, however, it should not be considered a neutral instrument or a device to be "deployed as neutral probes of the natural world, or determining structures of social nature"; such an apparatus is neither laboratory instrument, it is not about us, nor is it an assemblage including humans and nonhumans (2007: 142). If exhibitions are locations for temporary reconfigurations of objects, things, people, and concepts, then *Ghost Factory* as curatorial apparatus reveals specific material entanglements between computational and curatorial phenomena which produce data, information, knowledge, affects, experiences and so on. *Ghost Factory* as a spacial and temporal curatorial aparatus performs these entanglements and makes them public.

Anmerkungen

[1] See the website for *Ghost Factory* which holds the original version of *Ghost Machine* application here

http://www.ghostmachine.thecommonpractice.org/. I am indebted to Andrew Prior, my collaborator on Ghost Machine and Ghost Factory, for his brilliant contribution to this project and making it what it is!

[2] Pseudocode is non-executable programming language used for conceptual explanation of the code to be read by human rather than a machine. The pseudocode would require translation into executable code in a chosen programming For example to run this code in p5.js, a java based program, popular among artists and designers, a simple version of this could look like this:

```
function setup() {

// Split the text into a list of words words = auster_ghosts.split(/[^\w]/); console.log(words);

// Make a canvas.

createCanvas(300, words.length * 5);

// Set background color, using red, green and blue values from range 0-255. backgroundColor = color(240, 240, 240);

// Disable rectangle border noStroke();

}

function draw() { background(backgroundColor);

// Loop over each of the word positions. for (var i = 0; i < words.length; i++) {

// Take the words at position i. var word = words[i];

// Choose the fill color using RGB values from range 0-255. if (word == „Blue“) {

fill(color(0, 0, 255));

} else if (word == „White“) {

fill(color(255, 255, 255))

} else if (word == „Black“) {

fill(color(0, 0, 0));

} else if (word == „Brown“) {

fill(color(165, 42, 42));

} else {

// For other words, use no filling.

noFill();

}

// Draw a rectangle filled with respective color.

rect((i*30) % width*0.8 + (width*0.2)/2, 20+Math.floor(i/10)*textSize(), 25, textSize())

}
```

}

I want to thank Mace Ojala for help in writing this code and his generous time offering in reading and discussing this text with me. Winnie Soon for discussing versions of the pseudocode with me when we still shared office at Aarhus University.

[3] Indeterminacy in computing, defined as halting problem, refers to a situation where the problem is to determine if a computer will halt, that is if it will execute the program, or if it will run Alan Turing proved that no algorithm exists that can decide this.

[4] The poem Invocation of Contingent Others can be listened and read on the project's website http://www.ghostmachine.org/invocation.html.

[5] In the first exhibition, films recorded by participants were archived as part of the Film Gallery on the website http://www.thecommonpractice.org/ linking to users' own profiles. In this second exhibition the films are archived in a YouTube channel for Ghost Factory https://tinyurl.com/qopdptx.

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Abbildungen

Fig. 1: Screenshot of Ghost Machine in MaxMSP programming language [courtesy of Andrew Prior].

Fig. 2: From *Local Colour* by Derek Beaulieu (courtesy of Derek Beaulieu)

Fig. 3: Andrew Prior: Ghost Machine (2012), video 9:38, screencapture (2012). Courtesy of the Artist. Video is also available on Ghost Factory YouTube Channel https://tinyurl.com/qopdptx and on Ghost Machine website http://www.ghostmachine.thecommonpractice.org/film.html

Fig. 4: Ghost Factory: a working exhibition (2013). CMR, Redruth. Courtesy of the author. Exhibition view.

Fig. 5: Ghost Factory: performative exhibition with humans and machines (2015). Falmouth University, Falmouth. Courtesy of the author. Exhibition view.