

Enabling the Future, or How to Survive FOREVER¹

A study of networks, processes and ambiguity in net art and the need for an expanded practice of conservation

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¹ This title is a pun on JODI's work *Jet Set Willy FOREVER* (2010), see also p. 14-5.

The work presented in this thesis is the candidate's own.

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Abstract

Net art is one of the most viewed and experienced artforms, yet some net artworks stop functioning in less than five months. At the heart of this research lies the question of net art's survival. While net art is hardly accounted for in museum collections – the traditional keepers of cultural heritage – this dissertation explores the material and behaviour of net art. Using a broad range of interdisciplinary resources the chapters open up key theoretical issues that rethink museum practices. Among others, this includes notions of authenticity, authorship, documentation and documents, networks, open source, performativity and processual.

Arguing for the need to reconsider traditional attitudes in museums and notions of static conservation as well as acknowledging decentralised and community-based approaches, this dissertation describes an expanded practice of conservation in the computational age. It shows how net art operates through often imperceptible or ambiguous performance of processes and is networked in various ways. It then examines the way these strategies are used and fold back into notions of authenticity, documentation and variability.

It is in addressing and answering some of the challenges facing net art that this dissertation makes a distinctive contribution to the field of conservation, curatorial studies as well as to cultural and museum analysis. At the same time, an exploration of net art's intersections with conservation puts studies on net art into a new perspective. Consequently, the study enables more informed decisions when responding to, critically analysing or working with net art, in particular software-based processes. Surviving FOREVER means embracing rather than fearing ephemerality, loss and obsolescence.

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Acknowledgements

The path leading to this thesis began while working at the Netherlands Media Art Institute (NIMk) in Amsterdam. After eight years of curating and producing exhibitions, workshops, conferences and artists-in-residences, I wanted to explore in more depth some of the issues that I had encountered. After submitting my PhD proposal to Goldsmiths and starting the research, I had a meeting with my supervisor to convince him of my new topic: rather than analysing the behavioural impact of interactive art installations in public space, I wanted to direct my attention to the disappearance of net art.

This change in direction was provoked through talks with several artists about their concerns over their net artworks from the 1990s. Their artworks had not been acquired by art collections and the long-term maintenance had begun to take its toll. Although I witnessed the challenges of the conservation of video and installation art while working at NIMk, the conservation of net art was still a relatively open field. As a strong advocate for net art practices, I could not resist the challenge presented by net art conservation. After six years of research, I want to thank all of you, many whose names I cannot remember, for bringing your concerns to my attention.

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By the time a computer system becomes old, no one completely understands it. A system made out of old junky technology becomes, paradoxically, precious. It is kept running but as if in a velvet box: open it carefully, just look, don't touch.

The preciousness of an old system is axiomatic. The longer the system has been running, the greater the number of programmers who have worked on it, the less any person understands it. As years pass and untold numbers of programmer and analysts come and go, the system takes on a life of its own. It runs. That is its claim to existence: it does useful work. However badly, however buggy, however obsolete—it runs. And no one individual completely understands how. Its very functioning demands we stop treating it as some mechanism we've created like, say, a toaster, and start to recognize it as a being with a life of its own. We have little choice anyway: we no longer control it. We have two choices: respect it or kill it.

Ellen Ullman, *Close to the Machine* (2013[1997]:117)

Introduction

Around the turn of the millennium, artist duo JODI (Joan Heemskerk and Dirk Paesmans) revived the old computer game *Jet Set Willy* (1984). The game had attracted their attention because it had been programmed in Sinclair BASIC, one of the first computer languages designed to empower users of the initial and now obsolete ZX Spectrum personal home computers, released in the UK in 1984. The popular video game *Jet Set Willy* was one of the earliest games to feature bifurcating storylines. Before he is allowed to sleep, Willy, a tired miner and the game's protagonist, is ordered by his housekeeper to tidy up his house after a huge party. The player moves Willy through an immense villa, consisting of sixty rooms, a beach and a yacht. In each of the spaces, Willy tries to gather as many objects as possible.

Re-creating the game by reprogramming the code proved to be more difficult than JODI had envisioned, even with the help of an emulator — a software application that accurately imitates hardware or software functions.² The keys on the original ZX Spectrum keyboard had multiple functions. Re-typing commands, even a simple 'GOTO', turned out to be complicated, especially on contemporary computer keyboards which do not have the ZX Spectrum's easy short cuts. Therefore, JODI needed the right key combinations to accomplish each task.³ In the end, they gained control over the game by using an emulator to access the machine code, or the binary or hexadecimal instructions to which a computer directly responds. Once inside, they reconfigured the colours and sound, byte by byte. Their version was recorded on an audiocassette that could be played with the original ZX Spectrum. Although they lost the original audiotape, the user's experience was not affected, because only the arrow-keys were needed to move Willy around the game. In this case, the hardware was most important to JODI, not out of nostalgia but because the waiting for the audiotape to load was fundamental to the experience of the game.⁴ Instead of a nostalgic turn, they pushed the process of the game's becoming, while simultaneously addressing shifts in the socio-political systems that are embedded in technology.

JODI are renowned for their subversive and, at first sight, seemingly incomprehensible artworks, for example, a screen full of blinking punctuation characters (Fig. 0.1). With such artworks, they invert the visible and invisible in an attempt to come to grips with the computer system.⁵ Their projects also vary quite frequently from presentation to presentation.⁶ *Jet Set Willy* ©1984 has been

² Also see the interview with JODI conducted in 2004 for the exhibition and research project *Seeing Double* by the Variable Media Network: <http://variablemedia.net/e/seeingdouble/>.

³ 'GOTO' is a command found in many computer programming languages that performs a one-way transfer of control to another line of code.

⁴ Joan Heemskerk, http://www.variablemedia.net/e/echoes/morn_text.htm#jsw.

⁵ For more information, see Mackenzie (2006:39-41), who explains how their work plays with the 'instable mode of existence of code as text and execution, as instruction and process, as speech and action' (2006:41). I will return to this issue in Chapter 3. White (2006:96-101) addresses the malfunctions in relation to their affects on visitors and sets out an aesthetics of failure.

⁶ Not only do the artists present different variations of a work from venue to venue, they might suddenly, and without announcement, come in during an exhibition to change aspects of the work's presentation (personal observation when organising the exhibition *World Wide Wrong* at the Netherlands Media Art Institute in Amsterdam in 2005). Such behaviour is not uncommon and links to the question of when an

exhibited in various ways over the years. The first time it was shown was on a table with a 1980s television (CRT) monitor, the audiocassette, and the ZX Spectrum. Other times, JODI would show *Jet Set Willy Variations* (2002), a DVD containing multiple videos of modifications of the game, alongside the game itself. Almost ten years after the launch of the project, *Jet Set Willy* ©1984 was transformed into *Jet Set Willy FOREVER* (2010) when it was presented during the *Funware* exhibition at MU Art Foundation in Eindhoven. This time the artists decided to add documentation of the work as part of the presentation, thus making documentation part of the ‘final work’. *Jet Set Willy FOREVER* included the game on a ZX Spectrum; the DVD; video documentation of the artists demonstrating how the game can be played during a previous presentation of the work; a set of written instructions on how to play the game, and, hung on the other side of the wall, sixty prints showing the interior of the game — a cross-section of the house (Figs. 0.2 and 0.3). The organisation of exhibitions always entails a discussion about the extent to which a work should stand for itself or if additional explanations and documentation of the project’s previous manifestations are needed. In the case of *Jet Set Willy*, documentation serves several purposes. It gives instructions on how to install *Jet Set Willy* by showing, on video, what equipment is preferred and how to play the game. As such, the documentation could be seen as an informational document. However, JODI’s approach to documentation material is different; they do not see the documentation of *Jet Set Willy FOREVER* as separate from the work or as merely educational and informational. The documentation is an integral element of the work.

There is another aspect to this presentation, which is that the ‘tangible’ documentation, especially the prints, are likely to be more sustainable than the ‘original’ work, i.e., the code and the ZX Spectrum. While visitors admired the documentation video and the life-size floorplan of the game, workers at the exhibition space grappled with the functioning of old equipment, such as failing television monitors, cassette tape that easily broke, and cables that stopped transferring signals. Ironically, this relates to the pun indicated in the title of the work, which suggests *Jet Set Willy* can continue FOREVER.⁷ But the question is, of course: How will the work continue forever? It is generally acknowledged that hard- and software are prone to obsolescence even in the near future. I will return to this issue and its consequences several times in this dissertation. Given this, it is likely that the documentation, i.e., the texts, photographs or video, of the work will outlive the work itself. Furthermore, its chances of survival are diminished even further, since the work has not yet been acquired by an art collection, which would be tasked with its preservation.⁸

artwork is finished. I return to this subject in Chapter 5 when discussing processes in artists’ practices. For more examples and reflections on this question, see Becker et al. (2006).

⁷ Perhaps the title and especially the word FOREVER is not a pun. For example, it could also be an acclamation that hints at the longevity of their work. Both are probably right. However, I used the term ‘pun’, since many of their works are based in fun, highlighting the kind of ambiguity that is often found in net art (as I will explain in Chapter 1). For more information about their and other artists’ ‘fun’ strategies see Dekker (2014).

⁸ It could be argued, when taking into consideration today’s cultural heritage systems – i.e., how collection are formed, and hence what is saved and how it is kept and written about – being outside of the traditional ‘canon’ of art collections and museums will further jeopardise the existence of the work.

The question of net art's survival is at the heart of this research. Net art is an artform that is networked (individual components are connected), processual (something in execution and development), and ambiguous (in the technical and procedural as well as simply interpretative). In Chapter 1 I will return to the specifics of these characteristics in more detail. What I will show, as in JODI's example, is that net art is not a single physical object.⁹ It follows that its analysis should focus on the interrelations between and beyond the different components. This does not exclude material descriptions. As shown below, such materiality extends beyond that of the object. Even though net art is barely accounted for in museum collections, the socially established keepers of cultural heritage, some attempts have been made to think about its conservation (Dekker 2012a). In general, *conservation* entails all actions to preserve a work of art and anticipate its future deterioration. This includes examination, documentation, treatment, and preventive care of artworks.¹⁰

When it comes to ephemeral artworks such as performance art or dance and theatre pieces, an emphasis on documentation as a conservation method is not uncommon. In these cases, and with artworks that contain or consist of components prone to becoming obsolete, documentation, for better or worse, often becomes a substitute for the project. Some conservators and curators find these scenarios frightening. They consider approaches that 'simply' change the presentation or hardware of an installation, or show documentation instead of the work itself, to be utterly inappropriate. From this perspective, what implications do changes in the presentation format or the exhibition of documentation have for the conservation of an artwork? How will *Jet Set Willy FOREVER* survive in the future? In more general terms, what knowledge is needed to enable net artworks to survive? More importantly, what can conservators and curators of contemporary art learn from JODI's practice of variability, which is also inherent in many other net artworks? Throughout this research I will critically address variability as something that changes according to certain parameters, while answering in what way it allows for the reinvention or consolidation of existing dynamics.

The question of whether to conserve a work of art or not has been and will be debated as long as conservators, museums and collections remain. Rather than questioning the relevance of conservation as such, I will problematise current conservation practices for contemporary art in museums. I will discuss their focus on the object (authenticity) and/or the artist's intent. I will also address the key characteristics of net art – which I describe as networked, processual and ambiguous – and the consequences these characteristics have for potential conservation. I argue for the need to rethink traditional notions of conservation in order to consider decentralised and community-based approaches. The main aim of this dissertation is to engage with questions of expanded conservation practices that foreground variability. In other words...

⁹ To refer to such an artwork as 'a work' could be seen as problematic. Although this may be true, it is beyond the aims of this dissertation to explore this. For the clarity of my argument I will use the term 'work' to refer to net art.

¹⁰ This general definition is based on the explanation provided by the American Institute for Conservation (AIC): <http://www.conservation-us.org/index.cfm?fuseaction=Page.viewPage&pageId=620> and Chapter 2 in this dissertation.

In what ways does net art require a specific kind of conservation practice?

To answer this question, my research draws on a wide range of conservation practices and theoretical texts and terminology, ranging from media archaeology to linguistics, sociology, network studies and studies in computation. These fields share an interest in materiality, performativity and processes – themes that are also frequently discussed in conservation theory, albeit in different ways. To work towards a better understanding of the challenges in net art conservation, this research will provide a thorough analysis of the different usages and functions of the terms. At the same time, by introducing approaches outside of the conservation field, this dissertation aims to contribute to ongoing developments and discussions in conservation.

0.1. Materiality and temporality

Jet Set Willy FOREVER shows the challenges that curators and conservators face when dealing with net artworks. These manifest in different ways. First of all, to assure a (future) presentation, artworks require an active intervention on the part of the curator or conservator. For example, *Jet Set Willy FOREVER* is built from several layers, or components, that change or can evolve for each presentation. Such a variable process reflects a perpetually renewed present instead of the linear temporal perspectives followed in conservation. In general, conservation avoids alterations and change (Muñoz Viñas 2005:16). I will return to the notion of time in conservation in a moment, but will first address the specificity of materiality in net art.

Although changes to the components of *Jet Set Willy FOREVER* can be made, there is a specific materiality that is important to present. Some of it is visible, for example the CRT monitor or the ZX Spectrum. Others are less obvious but can be traced in the code, the BASIC language, or in the interactions or relations between different elements. The question is, what part(s) need to be shown, and consequently, how do they function and relate to each other? What is needed to make them function? Secondly, to (re)assemble and comprehend the functioning, and thus presentation or conservation of these artworks, people from various backgrounds need to be involved. Most likely, these people are not yet working in or with museums. I describe the function of such an expanded network in Chapter 3, when discussing the case study *mouchette.org*, and expand on the implications of such a network in the final chapter of this dissertation. As I will show in more detail in Chapter 4, many of the ‘material’ questions can be answered by looking at the documentation of the code and its annotations. However, the underlying question is what these different kinds of ‘materiality’ mean? A thorough account of the discourse around materiality far exceeds the goals of this research. Instead, I will limit my focus to materiality in as far as it is used, or useful, to the conservation of net art.

The notion of ‘materiality’ is closely related to the study of material culture, an interdisciplinary field that explores and analyses relationships between people and artefacts. For many years, the field

tended to focus on the passive use of material culture by humans (Durkheim 1982[1895]; Lévi-Strauss 1963[1958]). The term gained prominence in post-structuralist inspired anthropology and archaeology in the late 1980s, particularly through the works of Hodder (1986) and Tilley (1991). Materiality came to imply that social reality is actively constructed or challenged. However, most theories still focus on human agency and intentionality. In this research, I follow literary scholar N. Katherine Hayles' approach to materiality. She explains:

The physical attributes constituting any artifact are potentially infinite; in a digital computer, for example, they include the polymers used to fabricate the case, the rare earth elements used to make the phosphors in the CRT screen, the palladium used for the power cord prongs, and so forth. (...) [Materiality] emerges from interactions between physical properties and a work's artistic strategies. For this reason, materiality cannot be specified in advance, as if it pre-existed the specificity of the work. An emergent property, materiality depends on how the work mobilizes its resources as a physical artifact as well as the user's interactions with the work and the interpretive strategies she develops—strategies that include physical manipulations as well as conceptual frameworks. In the broadest sense, materiality emerges from the dynamic interplay between the richness of a physically robust world and human intelligence as it crafts this physicality to create meaning (2002:32-33).

Hayles opens up and complicates the notion of materiality in material culture, without stepping into views of technological determinism. Such an approach serves the sensibilities and uniqueness of individual instances of hard- and software and should be coupled with an awareness that the affordances of particular systems, environments, and technologies are often integral to creative processes. In other words, both hard and software components influence the creative process as well as the perception of the work. In addition, as my analyses of the case studies in this dissertation will show, material conditions are not solely technical, but also socially and culturally determined.

This notion expands approaches to materiality in conservation, which focuses solely on the analysis of material properties of physical objects. As I will explain in more detail in Chapter 2, although artists' 'intentions' are becoming more prevalent in decisions about conservation, most conservation practices depart from the final object when thinking about conservation treatments. Conservation tends to discard the importance of the 'social space'. By 'social space' I refer to materiality as a meaningful process through which the execution or presentation of the final work and the process of creation are extended and prolonged through active exchange. This is especially visible with free/libre open source software (FLOSS) developers, where collaborative and creative production is widespread. The social network makes the material meaningful. I elaborate on open and creative collaborations in more detail when analysing the case studies, particularly in Chapter 5 where I question the effects of open source for conservation. The issue also emerges in Chapter 6, where I discuss (open) collaborative practices and their potentials for conservation in more depth.

While conservators may take different kinds of information into account, a narrow focus on object-based materiality could neglect the creative or development process of an artwork.¹¹ As I will argue in Chapter 4 in particular, to understand the functions in, or performativity of, a work, it is important to understand the decisions artists make during development before deciding on conservation approaches. Following Hayles (2002), I believe materiality emerges from technical, political and social relations of network culture, without excluding the medium-based approach. An expanded approach could be helpful when discussing the importance of materiality in net art conservation. As such, in line with arguments by media theorist Anna Munster (2005), this approach is an argument for historical research embedded in socio-technical ensembles, as well as for the specificity of practices that emerge through networks and processes. Thus, it is important to acknowledge the historical, social and technical contexts in which such materiality is formed.

Throughout this dissertation I will argue that a strict or deterministic focus on materials (hard- and software) forecloses alternative approaches for conservation. A similar argument can be made for conservation's inclination to prefer a 'Cartesian' concept of time, which enforces an eternal present. By departing from the norm (of the present), what is sought is predictive knowledge. How will a work of art function in the future? In terms of conservation, what needs to be done so that it can function in its 'ideal state'? I will argue that it is more interesting to follow the variability of the work and thereby accept the idea that time is not neutral or objective. In other words, what does time mean when discussing change and variability as defining characteristics of net art and its conservation?¹² Although a thorough account of time goes beyond the scope this research, I will focus on the notion of time as it is used and valued in conservation, particularly how it relates to duration, as argued by Henri Bergson (2008[1910]) and later developed by Gilles Deleuze (1989[1985]). I will also discuss the notion of time as it extends to Adrian Mackenzie's (2006) understanding of computational time.¹³ The suggestion to think from computational time in relation to conservation allows for a more open approach to the future of net art. At the same time, as I will argue throughout, conservation may have much to gain by thinking of artworks more generally in terms of variability, processes and networks.

Ideas by Deleuze, following Bergson, are helpful when thinking of variable notions of time in relation to conservation. By positing time as *duration*, Bergson (2008[1910]) argues for a mobile and incomplete understanding of time (versus mathematical time, which he characterises as static). Whereas Bergson acknowledges heterogeneity of time, he sticks to a model of time in which the past and future penetrate into the present in forms of memory and desire. Furthermore, the past may interrupt the present by introducing novel ways of reading it, which could influence our future.

¹¹ There are cases where the artist's creative processes are being studied, in particular with paintings. Whereas technological artworks have not received the same attention, strikingly, these studies have become possible with the use of advanced imaging and analytical techniques such as X-ray, UV-fluorescence and Infrared, which allow researchers to see earlier changes by the artist, and, as they concluded, developments in the creative process. See, for example, Van Bommel et al. (2012).

¹² Time has been a major subject of study in many different fields, from religion, to science and philosophy. In the latter, time is regarded either in the Newtonian sense as a defined structure, a dimension independent of events, in which events occur in sequence, or in the tradition of Gottfried Leibniz and Immanuel Kant who argue that time is neither an event nor a thing, and thus is not itself measurable.

¹³ Although variability in artworks is profoundly studied, as I will show in Chapter 3, the concept of time in relation to variability is hardly addressed. One of the first attempts to rethink the concept of time in conservation is Hölling (2013).

Deleuze expands on this notion of time by arguing that the present is inactive in a sense that it both repeats and stays the same. The interpenetration of the past and future by means of the present is what Deleuze refers to as the ‘virtual’,¹⁴ which he associates with difference, pure difference, and thus change. Change adds to the potential for difference, for creation, for the radically new (Deleuze 1989[1985]).¹⁵ Net art is often not the outcome of a single presentation in time; it is constituted of different projects that (also) vary and change over time. Similar to computation, nothing in the work itself predetermines it to function in the way that it does. As French philosopher of science and technology Gilbert Simondon (2007[1969]) reminds us, a computer does not have a single use; rather it is a complex interplay of subsystems. Highlighting the ongoing processes of transformation, net art lives a ‘real time’.

When stating that the key characteristics of net artworks are constructed through an often imperceptible or ambiguous performance of networked processes, it may be useful to briefly consider how ‘time’ operates in computation. Paraphrasing Goriunova (2014a), net art does not only engage with the end-product, it rips open the process of its own making in order to multiply, alter, and affect the process, which also produces a materialist ontological revolution. In other words, net art is constructed and evolves over time. Its convoluted biography (for lack of a better term)¹⁶ zooms in and out, from micro-level traces to the macro-domains of the entire network. Similarly, time is not continuous. Computational time is about breaks and discontinuation, as exemplified in the change from Python 2.x to 3.x: ‘Python 2.x is legacy, Python 3.x is the present and future of the language’.¹⁷ This concept of time is close to what Adrian Mackenzie terms ‘algorithmic time’ (2006:51),¹⁸ which regards time as:

a mosaic of relations and orderings of actions brought into proximity [this includes] seek time, run time, read time, access time, available time, real time, polynomial time, time division, time slicing, time sharing, time complexity, write time, processor time, hold time, execution time, compilation time, and cycle time (Mackenzie 2007:89).

Here, the concept of time is heterogeneous and networked. It is a complex and distributed assemblage of interfaces with points of intersection and slippages of competing dynamics and intensifications. In other words, it reflects the variable and processual characteristics of net art. The key issue of this passage concerns the shift from continuous to discontinuous dynamic time – a time that relies on movement between computational input and output or a ‘topological transformation and reordering in

¹⁴ Bergson (2008[1910]) already used the term ‘virtual’, but Deleuze (1989[1985]) made the distinction between actual and virtual.

¹⁵ It is interesting to note that conservation of artworks is done according to the means available at the time. As time progresses, conventions as well as techniques change, which often leads to privileging the last changes made to an object, or as Lowenthal argues, its ‘fabricating heritage’ (1998). Such variability in the practice is accepted, and even wished for by some, see Fiske (2006) and Sterrett (2009), although it has also led to controversies in the past, as I will show in Chapter 2.

¹⁶ Here I am following the concept of biography as described and used by Van de Vall et al.. This concept constructs an artwork’s ‘life’ as an individual trajectory, whose meaning and effects ‘on people and events may change during its existence due to changes in its physical state, use, and social, cultural and historical context’ (2011:3).

¹⁷ For more information see <https://wiki.python.org/moin/Python2orPython3>.

¹⁸ By ‘finding a middle ground between the temporality of technologies as material orderings of movement and the temporal flows of subjective experience’, Mackenzie’s concept of algorithmic time is also an attempt to reconsider machine time in less abstract terms (2007:89).

time' (Mackenzie 2006:56). Such an understanding of time is helpful when considering the conservation of net art. Net art exists as fragments and evolves over time. As such, net art is created, computed, and layered with distributed interactions which sometimes overlap or return as they move through various platforms. As I will explain in Chapter 6, following the process of net art while seeing time as discontinuous will lead to new considerations for net art's future.

0.2. Methodology

I will provide insight into what a conservation strategy could mean for net art, or what it should move towards, by analysing how traditional and more contemporary conservation practices inform net art.¹⁹ I will compare these to how net artists use documentation to conserve their works. A study of conservation may seem counter-intuitive for an artform that is also a variable process or assemblage. However, a thorough analysis of existing strategies is needed before stepping outside of traditional practices and discourse. An analysis is necessary to learn from a past that has dealt with, albeit differently, the many challenges that benefit the conservation of net art. As I will show in Chapter 2, conservation is not a static practice. Throughout the years, it has been influenced by changing social and political dimensions in- and outside of the workplace (Ashley-Smith 2009). Future conservations of net art could benefit from what can be seen as a regressive strategy, not in the least because many net artworks consist of materials that have a long history in conservation practices.

At the same time, dealing with emerging and evolving networks and processes may not be seen as conservation. This is true, as I have argued when treating conservation as a time-related practice; i.e., valuing the past over the present. However, regarding conservation as process, in which certain elements mutate, become obsolete, or stay the same, signals a conservation of the future which aids in the possibility of production and development. Such a process does not exclude conservation, but incorporates future thinking into its practice. At the same time, it guards or creates documentation that serves as traces of a past that can be inserted into art history. In short, a methodology for studying these processes should follow a similar trajectory: taking after net art and following the method of 'construction'.²⁰ This means that I will explore the artworks by looking inside and through them to see what they consist of and how they behave. This includes analysing social and cultural influences. I want to emphasise that net art is not shaped solely by conservation but also shapes conservation

¹⁹ To depart from a museum's perspective when talking about caretaking is significant because museums are where art conservation began and where its practices have developed (Oddy and Smith 2001). However, this position may change as more and more specialised organisations, artists, and the public start documenting or conserving artworks. Whereas a few net artworks are acquired by museums, of which some have been conserved, I will focus my attention on how some artists think about conservation of their works. By emphasising these artists' perspectives, which I believe to be paradigmatic for the challenges underlying this research, I try to avoid a discussion about whether the artworks that were conserved by a museum were done well or not. Rather than arguing for the best museum practice, I want to stress artists' practices in doing conservation.

²⁰ Construction is well-known in the philosophical tradition of constructivism, which, in brief, argues that objects and situations are constructed by interpretations and because nothing is a 'given' there is a need to constantly maintain and re-affirm these constructions. Constructivism can be traced back to Greek philosophers, but it was not until 1934 that French philosopher Bachelard claimed, 'Nothing proceeds from itself. Nothing is a given. All is constructed' (2002[1938]:117). In 1967 Jean Piaget coined the expression 'constructivist epistemology'. Several types of constructivism followed, for example, social and cultural. Here I use the term to signal the possibility of change. What *Jet Set Willy FOREVER* is and what it means can change according to time and context.

through its interactions and relations. This does not exclude the use of conservation methods and theories but regards the conservation of net art as a process. This process is inherent to the notion of net art, and therefore cannot be analysed from a single narrative. In other words, multiple viewpoints are needed to come to terms with a conservation of net art.

In particular, notions from media archaeology, such as ‘variantology’ (Zielinski 2006) and ‘cycle’ (Huhtamo 1994), as well as the idea of ‘assemblages’ found in media ecology (Fuller 2005) have informed this research. In the first place because there is an overlap with contemporary conservation. For example, ‘variability’, introduced by the Variable Media Network, is an accepted term and practice in visual arts conservation. I will return to the Variable Media Network in more depth in Chapters 2 and 4. The other two terms, as I will explain, are even less used or acknowledged, since they seem to counter conservation strategies that focus on conserving ‘original’ objects. Before addressing these issues, I will first explain why and in what ways a media archaeological and media ecological approach can be helpful for conservation of net art.

Early media archaeologists like hardware specialists Bernhard Siegert (1999[1993]) and Erkki Huhtamo (1994, 1995) followed the *a priori* of the technical, for instance, the materiality of objects such as circuit boards or fibre optic cables. This technological focus has been criticised for being too hermetic, shutting out the anthropological influence in, and on, technology (O’Driscoll 2002; Zielinski 2006; Daniels 2002). The main criticism focused on how media theory should not be reduced to issues of media technology alone. Despite intentions to open the scope of this research and include notions of social-technical assemblages, most critics remained focused on examining the physical workings of technologies. Although methods differ between various media archaeologies and media archaeologists, a common goal is to re-examine precursors of current media to analyse the importance of sometimes dead or forgotten media, and to assess their influence on the supposed newness of present (and future) media.²¹ As Siegfried Zielinski explains:

The goal is to uncover dynamic moments in the media-archaeological record that abound and revel in heterogeneity and, in this way, to enter into a relationship of tension with various present-day moments, relativize them, and render them more decisive (2006:11).

By promoting a non-linear approach to history, Zielinski uses Michel Foucault’s (2010[1972]) concept of archaeology as a method for analysing media. Interesting in relation to this dissertation, particularly in reference to variability, is how Zielinski describes ‘anarchaeology’ through the concept of ‘variantology’. Zielinski argues to abandon linear timelines and instead proposes a search for ‘individual variations’ within historical records. This could lead to the discovery of ‘fractures or turning points in historical master plans that provide useful ideas for navigating the labyrinth of that which is currently firmly established’ (2006:7). In the long term, individual ‘anarchaeological’ studies

²¹ For more information, see, for example, Wanda Strauven (2013), who discusses various contemporary approaches or ‘schools’ of media archaeology. She extracts four approaches from three different methods (film, media art and new media) and compares them to Foucault’s conception of archaeology (Foucault 2010[1972]).

will form a ‘variantology’ of media. Although it could be rightly argued that Zielinski lacks a methodological framework or point of departure, as I will discuss in Chapter 3, his project embraces experimentation and heterogeneity. These are important to consider in a field that is still developing, but which has already lost many of its materials due to (planned) obsolescence. To escape the fixation on content in the discourse of (mass-)media, a rereading and rewriting is imperative. Media archaeology insists on looking at media in operation, an approach that further distinguishes it from other historical practices. The distinction is important for the conservation of net art, which also preferences media in operation.²²

However, net art’s emphasis on circulation and the processual makes it difficult to take a media archaeological perspective in isolation. Huhtamo’s ideas of ‘cycles’ comes closest to including processes as part of media archaeological analyses. Following Michel Foucault’s archaeological concept, Huhtamo (1994) stresses the importance of an approach that follows cyclical developments and recurrent innovations instead of chronological accounts and continual progress. This kind of cyclic movement specifies a constant interchange between past and present, in which both inform and explain each other, but also raises questions that point to possible futures (Huhtamo and Parikka 2011:15). Similarly, Garnet Hertz and Jussi Parikka (2012) have pointed to ways of reimagining media archaeology as an artistic methodology that bends circuits and repurposes old media for new uses. However, rather than adopting the concept of a cycle, they prefer to recycle. In Chapter 6 I will return to the notion of a cycle. I follow artist Shu Lea Cheang’s use of cyclical development as something that signifies repetition. I argue that cyclical development is a learning process that is not geared towards something else, but provides an answer to what is strikingly absent in most media archaeological research: the lack of attention to the implications of this approach in terms of cultural heritage and conservation. Most importantly, media archaeological research neglects variability in the display and documentation of artworks that are made with and through technical means.

Looking beyond a media archaeological approach, ‘media ecologies’ more keenly address the idea of circulation and the cyclic. The term ecology is used by multiple people in various ways. Explaining the differences goes beyond the aims of this research. This dissertation refers to a media ecological approach proposed by media theorist Matthew Fuller (2005).²³ Fuller uses the term to analyse intricate artworks, in which he looks at ‘modes or dynamics that *properly* form or make sensible an object or process’ (Fuller 2005:2). Media ecology is a conceptual device that questions the evolving couplings of unlimited sets of humans, animals, networks, machines, etcetera, to avoid closure. More than in media archaeology, Fuller’s emphasis is on the different kinds of qualities *in* media systems and how these qualities mix and (inter)relate (Fuller 2005:2). As such, in media

²² This is particularly emphasised by Wolfgang Ernst (2011) and Jussi Parikka (2012) who depart from the notion of theoretical media archaeology and instead make a claim for media archaeology as a practice.

²³ The term ecology has been adopted in different fields. For example, in organisation and management ecology is a metaphor for viewing informational space as an ecosystem. See, for instance, Iansiti and Levien (2004). Or in the sense of environment, most prominent is Neil Postman’s media ecology association (<http://www.media-ecology.org/>), where media are the sole determinants for social growth and functioning.

ecologies all kinds of systems compose discourse, have rules of formation, and generate processes (Fuller 2005:61). Media ecology is insistent on materiality. As Fuller says:

how it can be sensed, made use of, and how in turn it makes other elements or compositions tangible (...) the different kinds of such qualities in media systems with their various and particular or shared rhythms, codes, politics, capacities, predispositions, and drives, and how can these be said to mix, to interrelate, and to produce patterns, dangers, and potentials (Fuller 2005:2).

Thus, a media ecological approach explores different elements in their context and/or relation to the event, installation or performance, including their developments. As such, the approach complicates as well as opens up possibilities in media archaeology. Such relational analysis is particularly useful for net art. As I have argued, net art is characterised through networks and processes that relate, often in incongruent ways, to different projects, actions, symbolic systems and people. With its focus on physical matter, a media archaeological approach misses the transgressions, incongruities and confusions that are fundamental to net art, especially in the way it relates to existing power relations. More importantly, as I will explain in Chapter 1, since such constellations evolve into something else as they move from variability to assemblages, the approach is also helpful when thinking of expanded conservation practices.

To briefly summarise, for the purposes of my research, the strategies of media archaeologists combined with the approach taken in media ecology are useful when considering a conservation approach to net art, or to understand the implications of traditional conservation on the practice. Take, for instance, the emphasis on individual variations or ‘variantology’ in media archaeology and other case studies that think through materials (Zielinski 2006 and Parikka 2012). Whereas a media archaeological approach finds profound richness in the work, rather than its mutations, relations and processes, I aim to focus on key notions in this dissertation, specifically variability and process, and how these characteristics influence a conservation practice that holds on to a final object. The concept of cyclical phenomena (Huhtamo 1994) will be helpful, as will an emphasis on assemblages that evolve due to audience behaviour and hard- and software changes (Fuller 2005).²⁴ From this perspective, the notion of circulation (Lee and LiPuma 2002) is applied in Chapter 6 of this dissertation to indicate a future for conservation of net art.

0.3. Structure of the argument

In this dissertation I am proposing a conceptual and practical conservation of net art. Each chapter is concerned with a specific challenge. I move from the technical and conceptual challenges of a

²⁴ Although net artworks are often dependent on participants, I will not emphasise or analyse audience behaviour or experience as such. This calls for additional research, which goes beyond the aims of this study. The importance of audience behaviour and experience is slowly receiving more attention in conservation. See, for example, Muller (2010), whose research deals specifically with audience behaviour and interactive installations.

conservation of net art to a critical analysis of traditional concepts of authenticity and performativity. Starting from net art's inherent qualities described in Chapter 1, and a critical analysis of the case studies that specifically address each, I propose the notion of 'authentic alliances', which gives prominence to the idea of 'circulation' and a set of relationships and processes that move away from ideas of a final finished object, to not only better comprehend conservation, but also envision how movement performs in and through net art. In the end, the different parts of this dissertation will move towards what conservation of net art could be in the future. As such, this study is not working towards a blueprint. Instead, it embraces key qualities from the artform and departs from those, thereby expanding conservation practices.

More concretely, in Chapter 1, I will elaborate on the nature and characteristics of net art. The term is disputed and has been described differently throughout the years. I emphasise characteristics that I believe are most relevant and challenging when dealing with conservation issues by highlighting its material qualities, in addition to its networked, processual and ambiguous nature. Such characteristics can lead to multiple instances of an ambiguous work, which are made by a dispersed network of participants. These characteristics are not necessarily unique to net art and can also be traced in, for example, performance art, land art, conceptual art, installation art, media art, and bio art. The newness (and perhaps urgency) of net art is embedded in the speed of developments and a new and poorly understood creation process and conservation approach.

Primarily, Chapter 2 provides a historical background to conservation and the issues raised in later chapters. Traditionally, institutions like museums and national archives have taken care of (cultural) heritage. It follows that they might be the first to tackle this challenge. In this chapter I will describe the ways current conservation theories and practices take variability and change into account. I explore the history and methodologies in conservation to examine how artworks have been taken care of by conservators over time, while also recognising that conservation has evolved differently from place to place and practice to practice. I point to historical developments that have been influential in the changing perception of artworks by leaning on historical work by conservator and art historian Salvador Muñoz Viñas (2005). In addition, I pay particular attention to the conservation of time-based media, which has acknowledged and emphasised variability as an inherent value of these artworks (Depocas et al. 2003; Laurenson 2006). In discussing technical difficulties (both hard- and software) in conservation of net art, this chapter will also trace the influence and meaning of applied science in conservation, which thrives on innovative technical means for restoring artworks. This opens up into an understanding of how certain kinds of anxieties have manifested themselves around the presentation, acquisition and conservation of net art.

In the next three chapters I explore how the notion of conservation can be expanded and evolved. Conservation as a practice has always operated on, and through the idea of changes to 'authentic' works (if one can speak of such a state). When dealing with net art, conservation will have to come to terms with the notion of change in a more radical way. As such, I argue for a new

understanding of conservation theory that embraces change and variability as inherent qualities of the artforms, and consequently of conservation. In Chapter 3 I discuss the meaning of authenticity as used in conservation. Following the example of *mouchette.org* by Martine Neddam, I assess whether (and how) a net artwork can be conserved, taking into consideration specific knowledge needed to conserve an artwork that is continuously updated and changed by social, political or cultural circumstances. I challenge the notion that net art is more complex to preserve than traditional artworks. From a technical as well as a conceptual point of view, I draw attention to conservation's desire to see objects as whole. I compare these views to an approach based on variability.

Whereas Chapter 3 is an extended contextualisation of current conservation practices, I discuss methods that move beyond such approaches in the chapters that follow. In Chapter 4 I focus on documentation as a conservation method to ensure the future re-creation of artworks. More specifically, I examine the consequences of such methods in relation to net art. In contrast, by analysing the documentation methods of the performance group Blast Theory, I question in what ways artists' documentation methods can be of help for conservation. Additionally, I intend to demonstrate that documentation facilitates the creation of new versions that build, elaborate and comment on previous states. This will open new ways of thinking about what conservation means, and provoke new ways of dealing with the function of documentation and the structure of the museum.²⁵

By analysing the case study *Naked on Pluto* (a Facebook-based game by Dave Griffiths, Aymeric Mansoux and Marloes de Valk) in Chapter 5, I argue that since net art is processual, and moreover depends on restricted networks, only certain things can be captured and saved. In exploring open source ideologies and methods, I argue for a conservation practice that starts from the idea of the 'processual', stressing the significance of and need for an acknowledgement of the value of distribution, re-use and development through which knowledge and practices survive.

In Chapter 6 I return to some of the key issues that surfaced while analysing my case studies. These key issues closely relate to ongoing debates in conservation practices, such as the notion of authenticity and questions of what constitutes a document. It concludes from such research that if museums want to incorporate net art into their collections they will need to rethink the structure of their organisations, acknowledge variability and loss, and reconsider notions of authorship, authenticity and copyright. Propositions for such a future form the end of this dissertation. Above all, these should be considered as ideas for further development and as part of an ongoing process.

²⁵ Albeit mostly in theoretical circles, the first discussions about this new way of looking are taking place. Some even speak of a third phase in conservation: the performative turn. I will return to this issue in Chapter 6.

1. Net art

New media art, digital art, software art, networked art, Internet art, net.art, networked art, post-internet, new aesthetics ... Over the past two decades, many terms have been used to signify contemporary art that uses (digital) networked media. In other words, using the term *net art* has not been uncontested. In an attempt to describe this ‘new art’, Julian Stallabrass used the term *Internet art* in 2003 to avoid the then charged term net art. Stallabrass argued that “‘net.art’ is a term that has become associated with a small group of early practitioners and a particular style, and it cannot be applied to online art as a whole’ (Stallabrass 2003:11). In the same year, Christiane Paul used the broader term *digital art* to present a ‘survey of the multiple forms of digital arts, the basic characteristics of their aesthetic language, and their technological and art-historical evolution’ not to ‘describe one unified set of aesthetics’ (Paul 2006:8). A year later in 2004, Rachel Greene refers back again to Internet art in her popular account *Internet Art* (also part of the Thames and Hudson ‘World of Art’ series, along with Paul’s book) on the history of art and the Internet. Unlike Stallabrass, Greene refrains from explaining why she uses the particular term Internet Art, and at times uses it and net art interchangeably. In the years following, many works of net art were placed under even broader umbrellas like *electronic media art* (Shanken 2009) or *new media* (Tribe and Jana 2006, Graham and Cook 2010). However, publications with a specific focus on art and the Internet used the term net art well before; for example, *Netz.kunst* editor Verena Kuni used it in 1999. That same year Tilman Baumgärtel published his first book *Net.Art*, followed by a second German/English edition in 2001. Both authors tried to move beyond what was defined as net.art by incorporating different types of art and artists. Baumgärtel described net art as follows:

Net art addresses its own medium; it deals with the specific conditions the Internet offers. It explores the possibilities that arise from its taking place within the electronic network and is therefore “Net specific”. Net art plays with the protocols of the Internet, with its technical peculiarities. It puts known or as yet undiscovered errors within the system to its own use. It deals creatively with software and with the rules software follows in order to work. It only has meaning at all within its medium.²⁶

Baumgärtel positions net art inside, and as part of, the Internet. However, given the wider dispersion of the Internet, and its computational qualities such as connectivity, globality, multi-mediality, mobility and interactivity, I want to argue for a repositioning of the definition of net art by focusing on specific computational qualities which can also take place outside of the Internet. Something that is, for example, well exemplified in some projects by Heath Bunting, whose work increased the visibility of all types of networks, from state bureaucracies to identity and national borders, as well as their

²⁶ This description of net art was written in Baumgärtel’s second book (2001a) and is a summary of the introduction and foreword of his first book on net art (1999). Whereas the first publication was only in German, the second edition is in German and English. Much of these early writings on net art, the Internet and its critical context were originally written in German. See also Lovink and Schultz (2010).

intricate relational structures.²⁷ Like Baumgärtel, by focusing on processes and networks as the basic qualities of net art, I am trying to move away from chronological approaches, which often group works based on their technological developments. I point to a wider function of networks that although informed by, also go beyond the scope of technology, thereby addressing the correspondence between analogue and digital positions.²⁸

In the following, I focus on the characteristics of net art to explain my usage of the term in more detail. I am not looking for a definition of net art by looking at specific historical moments or groups of people. Instead, I will emphasise those characteristics that I believe are most relevant and challenging in the context of conservation: networks, processuality and ambiguity. These terms are not *a priori* technical terms. They connect with the theoretical concepts and practices of art.²⁹ As I will explain, they are part of the propositions of net art's specificity. To phrase this more strongly, these qualities function as the constructive nature of net art. As mentioned in the introduction, by using the term 'construction', I want to stress that the aesthetics of net art are constructed. This means that net art is combined, composed, compiled and dependent on (non)human action and is not necessarily the consequence of a straightforward procedure that leads to specific results. Thus, to understand net art, it is necessary to see what it consists of, how these parts are built up, and how they behave. In other words, it is important to gain insight into the characteristics of net art and the ways they operate.

To briefly summarise, when it comes to net art, the process of creation is heterogeneous and involves incompatibilities, constraints, rules, and a certain level of improvisation that continually re-negotiates its structure. At the same time, based in (or on) computation, net art can be said to be 'universally' inclined. The notion of universality is mostly triggered by the universal zeros and ones found in computer functions, and is extended to examples like the Turing Machine, a machine that underlies the logic of any computer algorithm. Universality is also informed by high-level programming languages like Fortran and Java that have become 'stable' entities over the years in sense of their functional generality. I will return to the claim of universality in relation to artworks and conservation in the coming chapters, more explicitly in Chapters 3, 4 and 6. For now, it suffices to say that such an assumption is mainly triggered by machine language (i.e. universal zeros and ones) by which computers function. In other words, although net art is very particular in many ways, often behaving unpredictably, it also consists of specifiable entities. It could therefore be said that net art is dual in nature. Nonetheless, I would like to emphasise that whereas the structures may remain stable (or fixed) to a certain extent, re-negotiation processes are continuous and incongruent. In Chapter 6 I

²⁷ For examples and additional information, see <http://www.irational.org/heath>.

²⁸ A similar attempt to move beyond the confinement of net.art was the project 'Art for Networks' organised by Simon Pope from 2000-2002. Described by Pope as follows: 'On first encounter, net.art seems to be defined by the internet, that most visible and newsworthy of networks. However, there are other networks that also figure in our lives: those of identity, kinship, sociability, authorship and communication.' <http://www.chapter.org/1675.html> (accessed April 2011). Also Josephine Bosma (2011) stresses the importance of the notion of the network, which moves beyond the mere technological.

²⁹ See, for example, Carroll (1999a) on the philosophy of art. Networked art has its precursors in many experimental arts of the 1970s and 1980s. For extensive accounts see Chandler and Neumark (2005). Processual or process art will be discussed in further detail in Chapter 5; and for ambiguity in art see, for example, Gamboni on ambiguity and indeterminacy in modern art.

will analyse the duality between ‘fixed and fluid’ in more detail. For now, I will describe in what ways being networked, processual, and ambiguous functions in net art.

1.1. Networked

Being networked is not confined to technology, or to a medium; it is a condition from which specific situations arise. At the core of infrastructures, the term derives from ‘net’ and ‘work’. Net is an old English word for ‘netting, network, spider web, mesh used for capturing’, as well as ‘something knotted’.³⁰ The meaning has extended from 1839 to include ‘any complex, interlocking system’ (originally in reference to transport by rivers, canals, and railways). However, the term network surfaced in 1887 when used to describe something ‘to cover with a network’. The definition was further extended in 1940 ‘to broadcast over a (radio) network’. In 1972, it was used in reference to computers and in the 1980s to persons.³¹ Despite the definition, networks are not confined to technology. For instance, one of the main characteristics of communications networks is their ability to copy, share and distribute information between people and places.³²

Visionaries like Paul Otlet (1934) and Vannevar Bush (1945) dreamt of an underlying communications structure that would connect all of the world’s information. Although such networks existed, it took a few decades before computers were networked on a larger scale. The ARPANET in 1967 was the first large-scale network (Abbate 1999). It was based on packet switching.³³ In packet switching, each data file – regardless of content, type, or structure – is divided into fixed-sized units. For instance, larger documents are divided into many blocks, whereas smaller documents can travel in just one. A data system uses a single communications link to communicate with more than one machine. After connecting to the network, the user’s station adds control information and a header to each packet. This information is used by switching nodes to determine what route each packet should take to its destination. Each packet is sent independently, making it possible to traverse different routes. This routing is best served by a distributed network system (Baran 1964). At its destination, the local station strips the header information and reassembles the packets to form one complete message (Abbate 1999:17-18). This explains why copying does not equal reproducing the same discrete object, as I will explain in more detail in Chapter 6. Every object is first coded into a packet, then copied, distributed and reassembled. What appears as a fully connected network, is actually composed of a mesh-like interconnection of sub-networks of varying topologies (and technologies) that are all linked

³⁰ Douglas Harper, Online Etymology Dictionary, http://www.etymonline.com/index.php?term=net&allowed_in_frame=0.

³¹ Ibid, http://www.etymonline.com/index.php?term=network&allowed_in_frame=0.

³² See, for instance, Armand Mattelart’s *The Invention of Communication* (1996[1994]). In an attempt to move beyond the *presentism* in historical writing, which conveys the contemporary experience of a perpetual present, Mattelart provides thought-provoking accounts of the origins of communications networks and argues that these networks far precede a media-centric perspective.

³³ Donald Davies is credited for the term ‘packet switching’ (Abbate 1999:222, n. 11). Paul Baran (US) and Davies (UK) developed the concept of packet-switched networks independently from each other. A main difference between the two was that Baran devised his system in the light of sustainability, to survive a nuclear attack. Davies was more interested in making a commercially smooth and easy to use system for business communications. For more information on their concepts see Baran (1964), and Davies et al. (1967). For a historical perspective of the developments see Abbate (1999).

together. Each action can cause a break or failure; therefore independent tasks can easily influence the end result at delivery.

In sociology the concept of ‘network’ is best known as Actor-Network Theory (ANT), developed by Bruno Latour, Michel Callon and John Law in the early 1980s (Latour 1987).³⁴ From its sociological background it is understood as a method that studies relations in which actors of different orders are combined. For example, humans and (technical) objects – the actors – are viewed on the same ontological level where both are of similar influence in the execution of performance (Latour 1998). These actor-networks are transient and can exist in a constant process of making and re-making. As such, a network is about difference, transformation and heterogeneity, realised through ongoing relations between various actants. When applied to art, it follows that artworks (objects) can also be regarded as actants that have agency within a process.³⁵ As such, an interesting change occurs in which the artwork shifts from a fixed entity to one in transformation. Seen in this way, Actor-Network Theory can be useful for analysing ‘art in action’ as it draws attention to changes as well as places of friction (Van Saaze 2009). However, how are things in motion, like the moving images in film and other processes, described? And in what way is instability, unpredictability, or friction between actants or networks taken into account? A theorisation of networks or networked processes is also a struggle with the abstraction of dispersed elements that are hard to capture. Another aspect that often remains implicit in Actor-Network Theory is that things, and especially technology, are also inherently political. A seamless rendering of actants runs the risk of flattening out the inherent (political) qualities of the actants. Moreover, Latour has stated that he does not see the ‘strategically organised computer network’ as a metaphor of the actor-network. As he states, ‘a technical network in the engineer’s sense is only one of the possible final and stabilized state of an actor-network’ (1996a[1990]:67). Latour’s argument of a ‘final and stabilized state’ is hard to sustain when looking at the inner workings of a computer or the catalytic networks of relays that, at times, unexpectedly connect sets of data.

I will return to the tensions in networks at the end of this chapter. For the sake of the current argument it suffices to say that when characterising net art, the organisational design of networks is based on a flexibility and adaptability that serves to distribute data. Underlying what I address as net art, is a network consisting of linked structures and distribution systems that connect traces of projects and people. Artists use networked structures, in terms of situations, not only to inform others, but also as canvases to create and construct new languages, poetics and arts. Being networked is about making use of relationships among people. This includes technology, but is foremost about viewing systems

³⁴ There is much theoretical work on the influence of networks: from Jean François Lyotard’s description of the postmodern self as a ‘nodal point’ (1984[1979]) and Manuel Castells book *The Rise of the Network Society* (1996), in which he describes the new social morphology of our societies, to Michael Hardt and Antonio Negri’s examination of U.S. sovereignty as a form of ‘network power’ (2000), and Tiziana Terranova’s *Network Culture* (2004) where she investigates the political dimension of network cultures. However, relatively little attention has been paid to networks in relation to art.

³⁵ ANT differentiates between actors and actants (Latour also speaks of a mediator, Latour 2005). These terms are oftentimes used interchangeably, although others keep a strict division between them. I prefer to use the term actant, as it captures the performativity of that which I describe. For a more detailed discussion between the different terms see among others: Greimas (1991); Gielen (2008); Latour (1987, 2005).

and situations as mediums.³⁶ An example that explores the conceptual nature of networks is *The Web Stalker* (1997) by I/O/D.³⁷ *The Web Stalker* is a browser that offers an alternative interface to navigate the Web. It queries materials found in the network, including how they are structured, then displays information a regular browser would conceal: the stream of html code, the progress of connection, maps of links from the website, relations between URLs and automatic records of the site (Fig. 1.1).

Another example is Olia Lialina's *Summer* (2013), a GIF of the artist smiling, wearing a summer dress and her hair loosely hanging in the air, as she swings to and fro against a blank background that bleeds from bright blue to white. The GIF connects to a constantly changing address bar. A new website shows with each frame of the GIF, each featuring the extension /olia/summer (Fig. 1.2). The GIF is distributed across twenty-one websites, all hosting different interlinking frames. The work depends on the network and the 'swing' moves according to the connection speeds of the particular websites. *Summer* foregrounds and thematises the network, reflecting its dispersive nature and unstable condition.

A non-technical example can be found in Tino Sehgal's 'situated constructions', choreographed situations that unfold in time and space, which are performed by nonprofessional 'interpreters'.³⁸ Discussions about his practice often focus on his refusal of any form of documentation of his performances, including note taking, photography and other recordings. Critics have discussed his work as a provocation of institutionalised artworlds.³⁹ However, this is not Sehgal's aim. On the contrary, he emphasises that museums are 'one of the main agents of cultural values, and over time, offers a possibility for long term politics. It is a place where one can influence discourse in the future perfect tense' (Von Hantelmann 2010:136). His reluctance to document is concerned with the way memory is transmitted through the functions of archiving and collecting. This non-documentation is a way to avoid or prevent surrogacy or practices that use documentation to (re)inscribe works in ways unintended. From a network point of view, this part of the work, the (re)creation process, is more interesting than the performance. His method involves the transference of knowledge and memory processes through oral communication. As Laurenson and Van Saaze (2014) point out, the work is not only challenging for its liveness or non-materiality, but rather the demands it puts on the organisation to maintain memory of the event; not to mention the skills needed for their enactments – skills that, I should say, reside and perpetuate in external networks. Sehgal's working method goes against the structures of large institutional systems by emphasising the act of collecting and archiving as an event (Von Hantelmann 2010:135). This event consists of bringing those involved in the transfer together to

³⁶ When analysing networked art, I have been inspired, and influenced, by Craig Saper's book *Networked Art* (2001) in which he meticulously describes these methods by analysing many examples of what he calls 'intimate bureaucracies'.

³⁷ I/O/D was a collaboration between Matthew Fuller, Colin Green and Simon Pope (1994-9). For more information and download of the *The Web Stalker*, see <http://bak.spc.org/ioid/>.

³⁸ Sehgal is adamant not to refer to his works as performances, for one because they are shown during the full period of an exhibition. More importantly, Sehgal questions how choreographed bodies can become visual art and, in the process, provide art with a new material foundation. For more information about the material qualities of the work see Von Hantelmann (2010:130-43).

³⁹ See, for example, Bishop (2005) and Lubow (2010) for a more nuanced perspective concerning the non-documentation and live nature of his work. See Sehgal in conversation with Jörg Heiser (Heiser 2005:102-5) about how Sehgal tries to transform the relationship between conceptualism, choreography and the art object.

share knowledge of how to perform the works in the form of oral (or bodily) narratives. Sehgal creates intimate situations while critically addressing existing structures, including the pleasure of sharing special knowledge among a network of participants. His approach, quickly taken up by institutional artworlds, may seem a cunning method to attract attention. However, his attempts are foremost a way to use a social situation as a canvas to look for an alternative modus of production.

In summary, the network is an abstraction as well as a concrete and multi-layered reality in and through which artworks operate.

1.2. Processual

Networks are closely connected to processes. In art, the term ‘process’ is used to signify the creation or development process of the work, which may or may not lead to a specific outcome. In art history this is known as process art, a movement from the 1960s when artists emphasised the ‘process’ of making art by stressing concepts of change and transience. I will return to the specifics of these ideas and their relation to net art in more depth in Chapter 5. In computing, a process is an instance of a computer programme that is being executed. It contains the program code and its current activity. The process happens in between an input and an output. Simply put, a process is a series of actions, changes, or functions that bring about some kind of result. However, as I will explain below and particularly in Chapter 5, this is not to imply that there is always an end point. Similar to a network, processes are not independent; they address themselves and are connected to other elements and dynamics. The nature and power of processes is graspable in relations. Processes are also unstable. During execution, noise can appear or develop, causing errors, uncertainty and misunderstanding. This is of course also an interesting philosophical subject. However, in the interest of this dissertation, I will focus on the practical design and function of processes. This means that I will turn my attention to the creation and development processes of net art to see how processes operate, drive and determine social and cultural conduct; from playing games, to Amazon.com recommendation systems, and whether and how one is in or excluded from databases. This includes computing processes, but is not restricted to them.

Similar to process art, net art processes are often continuous. In the process, single objects or projects might emerge; but as I will argue throughout this dissertation, these single elements have little value by themselves and only function within and from the larger network. As such, processual relates to a study of processes rather than discrete events. For instance, in their project *Database Documentary* (2009-2011), YoHa (Matsuko Yokokoji and Graham Harwood) set out to investigate the workings of the National Health Service databases in the United Kingdom.⁴⁰ To comprehend how databases change our conduct, they followed the process of modelling, creating, implementing, completing, ordering and using databases -- those used in health services in particular. They traced the

⁴⁰ For more information about the project see http://yoha.co.uk/database_documentary.

databases processes by interviewing midwives, following database administrators and organising workshops. The outcomes revealed specific points of authority and agency, leading to new perspectives on empowerment. As such, the project demonstrated that database processes motivate all kinds of narratives and are connected to histories, economies and ideologies. In other words, while processes can be highly formal, they are also contingent. As such, they are expressive actants that function through systems, designs, and histories, which can simultaneously be influenced and executed through other processes and/or users.

The Project Formerly Known as Kindle Forkbomb (2013) by Übermorgen is exemplary in this sense.⁴¹ Übermorgen wrote scripts for bots to harvest YouTube comments on videos, which were then compiled in ‘narratives’ and uploaded in vast quantities as e-books in Amazon’s Kindle shop.⁴² In this project, the entire book publishing procedure is the story: from code and platforms, to writing and the distribution of texts (Fig. 1.3). The stories are outcomes of relations between texts and the different context that they are part of; thus, narratives are both human and machinic. The project both illustrates *and* produces reality. Übermorgen makes poetic use of the trappings of systems that produce new literature, while critically exploring the changing process and infrastructure in and of the writing, production and distribution of books. Or, as Übermorgen say, a ‘new breed – humans and algorithms alike – write within the cloud as the crowd and publishes in the cloud to the crowd’.⁴³

These examples imply that what is most important is the process and not necessarily the outcome. Übermorgen’s books will likely never be read. The dialogues with midwives, administrators and participants in the workshops were more important than a final outcome, as these exposed the effects and pitfalls of database structures and systems. A process can be endless, continually moving from one stage to another. Although a process is often made visible through an outcome, or by the actions of users, these are merely presentations of a temporary state. Processes continue, sometimes evolving into new directions. For some processes it is difficult to say where they end, since specific parts might continue in other directions. The significance is in the process of making instead of what is made. This is not to say that the latter is insignificant, but that meaning extends to a larger context. As mentioned before, the processual is not exclusive to technology. Earlier experiments can be seen in process art, some examples of land art, Fluxus, conceptual art, and mail-art, but technologies have made it easier to accommodate processes.⁴⁴ Technologies made whole new spectra of processes possible. Some of these examples have been taken into art history, however most projects that deal with processes do not fit neatly into art historical contexts. This is partly because they are part of an assemblage of works that can be difficult to read outside their environments. Or, by including bright

⁴¹ In 2012, Übermorgen collaborated with Luc Gross and Bernhard Bauch to build the web robot. After they parted, Gross and Bauch released their own version of the project as *Kindle’voke Ghost Writers*, <http://traumawien.at/ghostwriters/>. Currently both versions exist next to each other.

⁴² Amazon Kindle’s e-book shop functions through ‘Whispernet’, a cloud service that stores all reading data, i.e. what, when, where one reads, and potentially which notes and underscores are made.

⁴³ For more information about the project, see <http://uuuuuuuntitled.com>. About the infrastructure of digital publishing and its implications, see Andersen and Pold (2013).

⁴⁴ See, for example, Saper (2001) on mail-art and examples of Fluxus and conceptual art in Chandler and Neumark (2005). I will explore some of these in more detail in Chapter 5.

coloured stuffed animals, stickers, magazines, animated GIFs or corporate logos, they are considered to be closer to pop and mass culture with little ‘art aesthetic sophistication’. These works about systems, distributions, and their communities of participants are contextual, social and cultural constructions.

1.3. Ambiguity

Ambiguous means open to, or having several possible meanings or interpretations at once. If the goal of software development is to be useful and usable, then ambiguity is often regarded as the enemy. Whereas the simplicity of zeros and ones may be said to express no ambiguity, it is in their reading, their compiling and translating where ambiguity happens. This is not only a reference to the reading and understanding of computer results by humans. Uncertainty is already in the process of compiling and translating, from low to high-level machine languages (the zeros and ones).⁴⁵ In other words, ambiguity takes places in the execution (Chun 2011). I will explore what this means for conservation in more detail in Chapter 3 and particularly 4. For now, I will clarify how ambiguity functions in net art more generally. Ambiguity is a manifold strategy that functions and is used by artists in multiple ways. They may engage in ambiguity to create suspense, go against the grain, counter existing power and knowledge structures, or to obfuscate systems by purposely inserting breaks and interruptions. A wide range of forms which span across an array of media and circumstances can be loosely clustered around three strategies where ambiguity is deployed through technical execution, both in irony and fun, and as contextual. Although there are interpretational differences between them, they just as often overlap, or are used simultaneously.

A statement by Alexei Shulgin beautifully shows the importance and function of the type of ambiguity found in execution. In 1997, Shulgin explained the origin of the term ‘net.art’ in a post on the e-mailing list Nettime-I (Fig. 1.4). According to this statement, the term *net.art* emerged through happenstance. It was an unplanned technical misinterpretation: an ‘incompatibility of software’ (Shulgin 1997). Such technical failures, or ‘glitches’, are unpredictable changes in the system’s behaviour and have become a popular genre in software art (Goriunova and Shulgin 2008, Menkman 2011). Whereas glitch art often leads to abstract and formal aesthetics, failures are also used to create suspense or heighten the awareness of what is happening. This kind of suspense is often very effective, as I will describe in more detail in Chapter 4 when analysing Blast Theory’s performances. It is often hard to perceive the distinction between an actual breakdown and a simulation of the unexpected in the realm of novelty production (Berry 2001).

Shulgin’s statement also exemplifies another type of ambiguity that presents itself in irony and

⁴⁵ It is important to note that this is different from ‘ambiguous computing’, a field that is concerned with how ambiguity can be used as a resource for creating more engaging computer systems. William Gaver is among the important pioneers in this field. Of interest to my analyses of documentation practices of Blast Theory is Gaver et al. (2003) for their use of ambiguity in relation to capturing experiences. See also Benford and Giannachi (2011).

fun. This is the kind of fun that reflects on the process of making. These processes are analysed to provide insights and inspire. Fun in this sense is almost methodological and craftful, self-reflexive, and inclusive of the strategies of sharing. It is fun that takes place in the process and practice of making art, as well as during the production of concepts, that the artist arrives at unexpected events and projects. The aesthetics of fun reside in such processes, whether prepared or accidental, spatial or code-based, terminal or open-ended, or across scales, strata and time.⁴⁶

An example of ambiguous ‘fun’ is JODI’s website <http://www.wwwwwww.jodi.org/> (1993). When opened it shows a gibberish of unintelligible green text, punctuation marks and numerals on a black background (Fig. 0.1). Looking at the back-end of the site, the ‘view page source code’, what at first appears to be an error reveals itself as a diagram of a hydrogen bomb, drawn in slashes and dots (Fig. 1.5). Here, ambiguity is exposed through analysing and understanding the material. The work reflects and amplifies the difficulties underlying communication in relation to current technologies. In this particular case they ‘explode’ expectations about computation. In Shulgin’s example, ambiguity and fun show themselves foremost in the proliferation of the story. He uses the underlying immediacy of the event to his benefit by posting the message on a popular e-mailing list, where artists had already made statements about the origin of the term. Unlike other accounts, Shulgin’s e-mail message to Cosic lingered – perhaps because, as the critic Josephine Bosma reveals, it ‘was simply too good not to use as fact’ (Bosma 2011:241, n.85).⁴⁷ Bosma contacted Cosic to check the truth of the statement. As she recalls: ‘When the mail first appeared I immediately contacted Cosic to check the story, which I would have expected to have heard from the talkative Cosic’s mouth if it were true, and was told with a wink to let it be’ (Bosma 2001:241, n.82). Several years later this ambiguous answer ‘revealed’ itself through Wikipedia, where it was stated that Pit Schulz was the one who coined the term.⁴⁸ What this short account shows is that artists were trying hard to be ambiguous about their art, practice, and history, which in this case was successfully engrained in many art history accounts. Such ambiguity is evocative rather than didactic, and mysterious rather than explicit.

A third type of ambiguity is that of context. Here ambiguity arises when things can be understood differently in varying (historical) contexts, suggesting alternative meanings for each. An example is Shulgin’s statement that net.art is ‘readymade’. Although Shulgin explicitly refers to the creation process of the word, presumably not everyone noticed the reference to Duchamp’s *readymades*, in which he turned a ‘readymade’ (the term used in United States in the 1910s to distinguish manufactured objects from hand made ones) object into art by repositioning or rejoining it, or giving it a title, and signing it. Ambiguity is reinforced by the ‘decoding’ of the message, which

⁴⁶ For more information see Dekker (2014). This notion of fun is also explored and analysed by Goriunova in the exhibition *Funware*, <http://aaaan.net/funware>, and extended in Goriunova (2014b).

⁴⁷ This remark demonstrates Lowenthal’s argument on how history is fabricated (1998), but it also shows the importance of acknowledging that what is said depends on what, where, and by whom it is uttered, as well as who is paying for it, how long it is meant to last, and how it is marketed (Lowenthal 2008).

⁴⁸ Debates about accuracy and its role as a source of valid information have plagued Wikipedia since its beginning. Many critics have tried to downplay Wikipedia by pointing to the Encyclopedia Britannica (EB) as an example of an accurate reference. In 2005 the magazine Nature compared Wikipedia with the EB in terms of the accuracy of its science entries. For more information see: <http://www.nature.com/nature/journal/v438/n7070/full/438900a.html> (accessed May 2011).

appeared *and* disappeared by technical accident even though it was believed to have been read – in line with Duchamp – as a manifesto against traditional art institutions. The net made it possible for artists to be free and independent. But free and independent from whom? Certainly at the time the artists and the artworks were not taken in by institutions. The only world where net art existed was in the worlds the artists created themselves. So, there was little to battle against, or be freed from.

The battle that took place was more of an ongoing – and broader – discussion between art and technology. This is foremost, perhaps ironically, reflected in the merging of the words ‘net’ and ‘art’ through the dot. As Josephine Berry (2001) reasons, the dot between net and art signifies the utopianism of a small group of artists that came to adopt the name and the computer / e-mail that converged the terms ‘net’ and ‘art’. Or, as argued by Stallabrass, the dot signifies technology and culture (2003:10) where the computer is mediator between net and art. Here, art and technology use each other’s strengths to make the perfect combination. Berry argues:

Art takes explicit possession of technology’s power to penetrate the “web of reality” by presenting it to us afresh, by side-stepping the censorship of consciousness and rendering it open to a new kind of deployment. Conversely, technology unites with art’s power to reveal and articulate the world in non-instrumental ways (2001).

However, traditional artworlds were less inclined – as they had been for decades – to recognise this merger.⁴⁹ In this sense, the statement can also be read as a way to emphasise the division between two domains ‘net’ and ‘art’. Tellingly, it does not say ‘art.net’, which would have been obvious because .net was one of the six abbreviations used in the domain name system.⁵⁰ As such it implies a hierarchy suggesting that ‘art’ is in the ‘net’.

These examples show that ambiguity functions in net art by using, and at times, exploiting the technical means of communication and distribution of information. This is done to either explicitly or implicitly delude, (mis)guide, provoke or create suspense. The more people that join, the more the ‘network effect’ increases the success of ambiguous actions. Ambiguity shows itself here through context. Although it could be argued that uncertainty in the form of ambiguity is a defining feature of aesthetic experiences in modern and contemporary art (a.o. Farr Tormey and Tormey 1983), the explicit use of ‘computational aesthetics as ambiguous’ distinguishes net art from a purely visual or experiential practice. Ambiguity in relation to computation is dependent on sociocultural discourses that are implicit in recognising and understanding its function and meaning. Such a function of ambiguity actualises modes of being, levels and kinds of agency, and procedures of thought and configuration that operate through various scales of the technical, cultural, societal, and political.

⁴⁹ A division between a technological and an art historical lineage is still visible in most of the writing about net art. Rarely do the two meet or interact (Stallabrass 2010). The artworks, however, are taking part in multiple domains. Art historian Edward Shanken (2007) has written extensively on reasons for the non-existing cross-over between art and technology in art discourse.

⁵⁰ Another reason for not using ‘art.net’ was because this name already existed. The website <http://www.art.net> started in 1994 to show traditional art like paintings on the net. For more information about the top-level domains see <http://tools.ietf.org/html/rfc920>. Initially .net was not mentioned but added by the first implementation.

1.4. From variability to assemblages

In summary, some characteristics of net art are networked, processual and ambiguous. This can lead to multiple instances of ambiguous works that are made by a dispersed network of participants. But what does such multiplicity, or variability, mean? In biology the term variability means the power of living organisms to adapt themselves to changes in their environment, possibly giving rise to infinite variations in structure and function.⁵¹ The Variable Media Network (VMN), to which I return in Chapter 2, and particularly in Chapter 4 to discuss their documentation method, uses the term variability in a similar way. There, variability defines acceptable levels of change within any given art object without losing a work's essential meaning (Depocas 2004). Together with Richard Rinehart, VMN co-founder Jon Ippolito stresses that digital art is inherently variable: 'variability is build into the medium and the artwork to some extent inherits that variability from its material substrata'.⁵² Variability is also a fundamental aspect of software. Lev Manovich uses variability to describe a consequence of numerical representation and modularity that renders media 'programmable' and thus able to be manipulated mathematically (2001:32).⁵³ It is generally recognised and accepted that eventually any successful software has to exist in multiple variations to survive (Czarnecki 2013). In this research I use variability to describe artworks that possess changing states.

However, it is important to note that variability is always variable *to* something. In other words, such artworks change but remain based on, or in close relation to, (parts of) earlier versions. Although this will be the case for many net artworks, it is also possible, as I will demonstrate, that parts of the artworks, although they depart from something, cease to exist. Such ruptures, or breaks can influence an artwork in multiple ways. As previously mentioned, parts can change because of technical or other constraints and thereby mutate into something else. Similarly, important parts may become useless or cease to exist all together, its place taken over by something more relevant.⁵⁴ In these cases, artworks become dissonant instead of harmonic. Although variability is possible, mutation means something new. Similarly, in conservation this would be seen as a point where something new begins. How can this seeming impasse be overcome?

One solution could be the notion of assemblage as put forward by Deleuze and Guattari (2004[1988]) and later simplified by Manuel DeLanda (2006). DeLanda uses the term as a way of conceptualising a wide range of patterns that hold heterogeneous elements together. An assemblage expresses relationships in which processes and emergent properties are not seen as belonging to

⁵¹ See for example Mayr (1963) who explains that evolution is facilitated by the fact that wild species are not genetically uniform populations, but are characterised by a high degree of overt or concealed variability.

⁵² Quote by Richard Rinehart during his presentation at the symposium Software Art, POCOS (Glasgow, 11 October 2011), where he gave a presentation about one of the chapters of his new publication, co-authored with Jon Ippolito, *Re-Collection. New Media and Social Memory* (forthcoming 2014). The presentation can be viewed online: <http://vimeo.com/31440197> (accessed January 2012).

⁵³ According to Manovich this also means a one-to-many relationship. This relationship is, for example, characterised by the possibility of multiple applications in a single file. I return to this specific point in Chapter 6.

⁵⁴ This situation is also known in more traditional arts. For example, in painting the use of colour changed due to chemical innovations, the introduction of synthetic pigments, and the relevance or status of older pigments. See, for instance, Ball (2001) who stresses the importance of chemistry in painting by explaining how styles and genres in painting have been influenced by what was available to the painter. Similarly, Pastoureau (2001) investigates the ever-changing role of blue in painting and in society at large.

properties of individual parts, but attain meaning through the relations (i.e. an assemblage is always a collective). This is not unlike a description of Surrealist collages in which unrelated and eclectic elements are brought together through different types of connections (Fortun and Bernstein 1998:99). More importantly, in an analysis of Deleuze and Guattari, and subsequently DeLanda, the different components of an assemblage have and maintain autonomy from the whole, which allows them to disconnect and become part of other assemblages while preserving their identities. Such a reprocessing signals conservation of the new and a practice of reinvention. This is not simply about conserving or rearticulating the past, but about following a trajectory that can be assembled in different ways. It follows that conservation is not restricted by a past. It is more concerned with the present and possible future. Regarding net art as an assemblage does not allow for nostalgia; it perpetuates in its recombination. Whereas a network (or ANT) provides a descriptive method that is aimed at creating chains of associations that do not foreclose on the network, it does not account for processual behaviour. Neither does it explain why a particular network emerged or how it relates to other networks. An assemblage can help diversify and clarify these relationships. As such, the assemblage does not replace but rather adds to an understanding of network behaviour and processes.

To conclude, once technical, cultural and social contexts become historical, it is difficult to interpret artists' (ab)use of techniques and systems. As mentioned, these characteristics can be traced in other artforms and are not unique to net art. Dietz (2005) argues that what all of these artforms have in common is that specific knowledge is required to understand, maintain and recreate these works. They have no foundation in tradition, nor are they always easily referenced. For instance, a conservator may be able to read, understand and apply the instructions of Sol LeWitt's drawings, but it is very difficult for most people to read, understand and meaningfully work with code that is used in a piece of net art. In other words, the newness of net art is embedded in the speed of developments, a new and poorly understood creation process and preservation approach. These two phases can no longer be separated.⁵⁵ So, what is the future of net art when applying existing conservation strategies? In the following chapter I will explore the history and methodologies of conservation to examine how artworks have been cared for by conservators over time. These insights are guides into the decision-making processes and the approaches taken in net art conservation.

⁵⁵ Also see computer scientist David M. Levy, who gives a useful account of the newness of computer-based arts by comparing it to the book publishing process (2001:131-57).

2. Conservation: moving towards variability

To understand the conditions of conservation, my aim in this chapter is to examine how conservators have taken care of artworks over time. A thorough historical account of the developments in both conservation theory and practice goes beyond the aims of this research. Conservation practice does not consist of a well-formed or entirely consistent narrative. It evolves differently from place to place and practice to practice. In this chapter, I focus on several historical developments that have been influential in the changing perception of artworks. I lean on historical works by authors such as Lowenthal (1985, 1996), Dykstra (1996), Caple (2000) and Muñoz Viñas (2005)⁵⁶, starting with theoretical discourse in architecture. I then move from architecture to paintings and visual arts, with specific emphasis on developments in conservation over the last few decades, particularly those concerning the conservation of time-based media. Time-based media emphasises variability as an inherent value of these artworks (Depocas et al. 2003; Laurensen 2006). I pay special attention to the role of applied science in the evolution of the field, because it has played an important role in the development of conservation. Tracing the influence and meaning of applied science opens an understanding of certain anxieties surrounding the presentation, acquisition and conservation of net art. I return to this issue in Chapter 6, where I argue that contemporary art museums are hesitant to acquire net art. I hypothesise that this attitude reflects a fear of the unknown and an aversion to technological progress, which has always been under suspicion in the museum world and has led to a strategy of fixation instead of variability (Lowenthal and Binney 1981).⁵⁷ This current chapter should be read primarily as an introduction to the roles played by museums, artists and applied science in conservation practices. As such, it provides a historical background to issues raised in later chapters.

Terminology

Conservation, *restoration* and *preservation* are loaded terms that often lead to confusion. The terms may have different meanings depending on the country or organisation. There is little consensus and much debate on what conservation involves (Bracker and Richmond 2009:xiv). In general, *conservation* entails all actions taken to preserve a work of art and the anticipation of future deterioration. For instance, the American Institute for Conservation of Historic and Artistic Works (AIC) defines conservation as: ‘The profession devoted to the preservation of cultural property for the

⁵⁶ These authors have been pioneers in the field of traditional conservation theory: Lowenthal because of the relationship he makes between history and cultural heritage; Dykstra has been credited for his efforts to describe and analyse the notion of ‘intention’; Caple is well known for his research into the interrelationship of specialties and conservation to closely related professions; Muñoz Viñas asserted that there currently exists a Contemporary Theory of Conservation which is to be set against the Classical Theories, showing the contradictions of the latter and presenting elements that form the new theory. Other influential theoreticians include Jonathan Asley-Smith (conservation ethics), Miriam Clavir (non-western practices), Ernst van de Wetering (authenticity and ethics in conservation), Barbara Appelbaum (the relationship of the conservator and custodian), and Joyce Hill Stoner (conservation practices in the United States).

⁵⁷ In particular this is true for the acquisition and presentation of technological artworks; in conservation new technologies to inspect or work on artworks have been quickly embraced, see also n. 11.

future. Conservation activities include examination, documentation, treatment, and preventive care, supported by research and education'.⁵⁸ The term *restoration* is used with regard to a certain practice in conservation, namely the actions undertaken to restore an object to known preceding states.⁵⁹ *Preservation*, on the other hand, focuses on the prevention of future deterioration of artworks. According to AIC, the goal of preservation is to prolong the existence of objects of cultural heritage, which can also be seen as one of the activities of conservation. In practice, the terms *conservator* and *restorer* are used simultaneously to signify the maintenance and preservation of cultural heritage. This means intervening in the process of decline, or in some cases repairing damage caused by earlier restorations. In the course of this dissertation it will become clear that in reference to net art, attempts to define the function and meaning of conservation are in need of reconsideration. For now, following Muñoz Viñas (2005:15), I will use the term *conservation* as an umbrella term to refer to conservation as a theory and practice that restores and works towards preservation.

2.1. Extremes in conservation

According to art conservator Joyce Hill Stoner (2005), present-day conservation extends far beyond the traditional practice. She argues that a conservator of the Twenty-First century:

must thoroughly know their specialities, including current philosophy, history, literature, ethics, and the material properties and methods of analysis (subjects might range from underwater cannonballs to ivory miniatures); collaborate with scientists and be able to understand scientific terms and methods; cooperate with allied professionals, including archaeologists, art historians, and the various cultures of origin; understand proper light levels, indoor pollutants, insect life cycles, climate control, emergency preparedness, and toxicity; be articulate advocates who write papers, give presentations, and in this time of economic cutbacks, be able to charm politicians, foundation heads, and reporters from “Sixty Minutes” if necessary (2005:56).

It seems that the job description of the conservator has evolved drastically from the ‘three-legged stool’, a term coined by George Leslie Stout, who is generally considered a key figure in the history of art conservation in America. Stout means that a conservator should have a thorough grounding in art history, archaeology or library science (depending on their specialty); excellent hand skills—painting, drawing, sewing, sculpting, casting, etc. (depending on the specialty); and excellent training in organic and inorganic chemistry. In other words, a conservator should have a complete understanding of the properties that make up art materials, including which materials are used in treatment (Stoner 2005, Kendzulak 2012).⁶⁰ So, how did this practice evolve? A key example in the emergence of

⁵⁸ <http://www.conservation-us.org/index.cfm?fuseaction=Page.viewPage&pageId=620> (accessed December 2009).

⁵⁹ In 1989, the SFIIC (Section Française de l’Institut International de Conservation) Congress Proposal started a European Federation of conservator-restorers (E.C.C.O.) to promote a high level of training and to work towards legal recognition of a professional status. To that end, it developed and published several professional guidelines in 2002. <http://www.ecco-eu.org/>.

⁶⁰ George Leslie Stout co-authored *Painting Materials: A Short Encyclopedia* (1942) and played an important role in organising the Foundation of the American Institute for Conservation (FAIC), which is an oral history project that includes interviews with conservation professionals. See: Hill Stoner (2005:41-42).

‘conservation as profession’ is the story of Pietro Edwards (Jokilehto 1999). In 1778, the Venetian Senate declared Edwards the first Venetian inspector for the restoration of public state-owned paintings. Just before Edwards’ appointment, the city of Milan ordered that restoration activities could only be performed under special license.⁶¹

This declaration formed the background for discussion on the excesses of conservation and at the same time the position of the restorer. In 1786, almost ten years after his appointment, Edwards came up with suggestions for handling old and damaged paintings. For many conservators this marked the beginning of a differentiation between removal of superficial dirt and alteration of the material itself, hence how modern conservation is understood today (Jokilehto 1999:55; Muñoz Viñas 2009:47). Among the most cited contributions to conservation theory are writings by two influential figures: English art critic and theorist John Ruskin (especially his essay *The Seven Lamps of Architecture* published in 1849), and French architect and theorist Eugène Emmanuel Viollet-le-Duc, who restored, among other buildings, the Notre Dame in Paris and the medieval fortified town of Carcassonne.⁶² Their opposing views form the centre of the debate in the history of conservation theory.⁶³ Both men rediscovered the practices and products of classical sculptures and architecture. Ruskin was not in favour of restoration. As with most of his contemporaries, his love for and devotion to architecture made him a strict follower of authenticity.⁶⁴ According to Ruskin, all changes a building underwent were memories of the past. A building was not just an object of the present experience, but a memorial, monument, and relic of the past.⁶⁵ From this perspective, when the individual parts of a building need restoration one should:

Watch an old building with anxious care; guard it as best you may, and at any cost, from every influence of dilapidation. Count its stones as you would jewels of a crown; set watches about it as if at the gates of a besieged city; bind it together with iron when it loosens; stay it with timber when it declines; do not care about the unsightliness of the aid: better a crutch than a lost limb; and do this tenderly, and gently, and continually, and many a generation will still be born and pass away beneath its shadow. Its evil day must come at last; but let it come declaredly and openly, and let no dishonouring and false substitute deprive it of the funeral offices of memory (Ruskin 1989[1849]:196-97).

This emphasis on the authenticity of the original building was countered by Viollet-le-Duc, who proposed a more nuanced (or radical) method. In his view, one could restore buildings, even without evidence of their original states. He wrote: ‘the best option is to assume the role of the primitive architect, and imagine what he would have done’ (Muñoz Viñas 2009:48). Exemplary in this sense is his restoration of the Medieval town of Carcassonne, including its castle, Gothic cathedral and

⁶¹ For more information, see Maria Theresia dei Gratia, Regina Hungariae Bohemiae, etc., Milan, 13 April 1745, signed by Il Principe Lobkovitz. Parts are translated in English by Jokilehto (1999).

⁶² Several other pivotal contributions on western conservation theory are described in, among others, Price et al. (1996).

⁶³ For a more elaborate discussion of the debate, see Lowenthal (1998), Muñoz Viñas (2005), Jonathan Ree (2009).

⁶⁴ Ruskin was mostly interested in historic authenticity (being historically accurate). There are also other modes of authenticity that I elaborate on in the next chapter.

⁶⁵ Besides fidelity to their creators, Ruskin also stressed the importance of common property: Buildings were meant for public use and should not be seen as private property (Ruskin 1989[1949]:186, Lowenthal 1998:67).

compact urban pattern.⁶⁶ The massive walls of the fortified town date back to late antiquity. Viollet-le-Duc restored the internal fortifications, along with a number of the towers on the external defences. Instead of following historic legacy, he adorned each of Carcassonne's wall towers with a pointed roof, which was more typical in the harsher climates of northern France than in the south (Fig. 2.1).⁶⁷ Departing from historical approaches to restoration, Francesc Xavier Costa Guix argued that Viollet-le-Duc's efforts extended beyond mere accuracy of archaeological reconstruction. Primarily, their purpose exemplified the first use of military architecture as a monument to the permanence of territorial occupation. As such, 'the developments of military art in a specific piece of architecture would be able to speak for the history of France' (1988:3). Ruskin and Viollet-le-Duc have become iconic symbols of the extremes views in conservation treatment. However, conservation treatment is never black or white; the practice is one of careful analyses and skillful negotiations of ethics that vary depending on context and time. As affirmed by Jonathan Ashley-Smith, 'the way conservators work is heavily influenced by the internal politics and pressures of their employment' (2009:6).

2.2. Objectivity and scientific practice as methods for conservation in museums

The transformation of early 'cabinets of curiosities' and private art collections into museums is one of the reasons the profession of conservation gained importance in the Eighteenth and Nineteenth centuries. During this period, museums began preserving their valuables and organising their collections through documentation (Alexander and Alexander 2008). As Clavir remarks, museums were regarded as public trustees and, as such, had duties to preserve works in their collections: 'the condition of the objects came under their judiciary concerns. In addition, in public museums the restorers' work also came under scrutiny from the trustees and the public' (1998:3). To preserve their objects, museums started collaborating with craftsmen and scientists. In retrospect, although it may seem strange that so much emphasis was placed on the application of scientific knowledge and methods, it was widely accepted under the influence of the Enlightenment that science was an unquestionable universal method.⁶⁸ This idea was reinforced by the already established practice of conservation in natural history museums. In these museums, collections of species were assembled and cared for as reference material for scientific taxonomies and/or evolutionary theories, meaning that evidence for scientific theory was closely related to reference collections. Any change to the references, for example collected plants, would influence scientific theories built on them.⁶⁹ As a result of this changing notion of art in Western society, debates on the use of scientific methods in

⁶⁶ The restoration of the Carcassonne was only acknowledged in 1997 when it was nominated again, after being denied World Heritage Status in the early 1980s. It did not satisfy the criteria of authenticity in the 1980s, whereas in the 1990s it was included because of the exceptional restoration work by Viollet-le-Duc (Rodwell 2007:72). This inclusion was done in light of *The Nara Document on Authenticity* that was written in 1994. I elaborate on the significance of this document in Chapter 3.

⁶⁷ For a detailed account of the reconstruction and its effects, see Guix (1988).

⁶⁸ The importance of applied science in relation to art conservation can be found in many theories and in practice. See, for example, accounts in Clavir 1998; Caple 2000; Muñoz Viñas 2005.

⁶⁹ For more information on the evolution of natural history museums, see, for example, Alexander and Alexander (2008[1979]:53-84). For the care and conservation in natural history museums, see, among many others, Carter and Walker (1999).

conservation practices intensified in the late Eighteenth and Nineteenth centuries, as did the use of scientific measurement and analysis for restoring works of art (Muñoz Viñas 2005).

The general perception was that before the Nineteenth century the profession of conservator was predominantly regarded as the domain of artists and craftsmen who restored without ‘proper’ standards (Caple 2000). According to Van Saaze, this position explains why, historically, little attention has been given to theoretical or philosophical discourse defining various restoration practices (2009:37). This changed by the end of the Nineteenth century when research focused on conservation of physical objects with the help of scientific research. These methods were based on natural sciences and included analysis of ageing materials. It is important to note that the use of science in conservation was intended as a diagnostic and research tool. It implied the use of instruments, methods and techniques that were developed for other disciplines. As such, conservation science means ‘applied science’, a science that applies scientific knowledge to human needs to solve practical problems and technical developments.⁷⁰ At times, the notion of ‘hard’ science is used in conservation theory to signal measures based on scientific analyses, such as tests for the presence and actions of specific chemicals. Muñoz Viñas (2005) uses the word ‘hard’ to distinguish ‘soft’ science methods (e.g., historical science, archaeology, philology and palaeography), implying the use of hard facts, precise measurements and repeatable experiments developed under controlled circumstances.⁷¹

The modern discipline of conservation is said to have started with scientific method and the use of materials, as well as with an ethical understanding and recognition of the importance of keeping conservation records (Caple 2000, Philippot 1996[1983]). The year 1930 marked an important moment in the use of scientific methods in conservation. That year the *International Conference for the Study of Scientific Methods for the Examination and Preservation of Works of Art* took place in Rome, where participants convinced the world that the use of scientific methods was an important supplement to the history of art and museology studies (Clavir 1998:3). It was a gathering that marked the ‘emergence of two fundamental beliefs in conservation, the belief in preserving the integrity of the object and the belief that the best way to do this is through the application of science’ (1998:6). For example, in a first international collaborative effort, a group decided to write the ‘Manual on the Conservation of Paintings’, which was published in Paris in 1939.⁷² Although it can be argued that the 1930s, and the conference in Rome in particular, were pivotal to changing attitudes in conservation, it is also important to understand that the period after World War I had a catalytic effect on the development of scientific conservation (as did WWII). On the one hand, it accelerated developments in technological and material resources, which were useful for analyses and experimentation in restoration practices. On the other hand, the War caused extensive damage to cultural property, which

⁷⁰ For an elaborate account of various traditional conservation methods, see Hill Stoner (2005). Reedy and Reedy (1992) wrote a report on experimental design for art conservation research. It covers practical and statistical aspects of design, and laboratory experiments into art materials as well as clinical experiments with art objects. It also compares general principles resulting from concrete research problems in conservation.

⁷¹ For an analysis of the use of science in conservation of traditional art, see Versteegh (2009).

⁷² For a detailed account of the conference, see Stout (1964).

needed to be restored or rebuilt. To facilitate and stimulate this process the government in the United Kingdom, for example, established and funded a centralised Department of Scientific and Industrial Research, which was accessible to national institutions. As a result, the British Museum called in scientists to develop its own Department of Scientific Research. The formation of this department proved to be of great importance to British conservation and its influences elsewhere (Clavir 1998:6).⁷³ The scientific position was further reinforced in 1950 with the founding of the International Institute for the Conservation of Museum Objects (IIC),⁷⁴ which broke away from earlier ‘unscientific’ restoration and conservation practices that were based on arts and crafts skills. The aim of the IIC was ‘to improve the state of knowledge and standards of practice and to provide a common meeting ground and publishing body for all who are interested in and professionally skilled in the conservation of museum objects’.⁷⁵

2.3. Discussing conservation methods

In addition to the implementation of science, another line of thought developed in conservation theory that is characterised as the ‘historico-humanist approach’ (Philippot 1996[1983]), also known as the ‘aesthetic theory of conservation’ (Muñoz Viñas 2005). From the late Nineteenth into the mid-Twentieth century, this approach emphasised the historical and aesthetic dimensions of restoration. The methodology reached its apex with art critic and historian Cesare Brandi. Brandi is an important name in the trajectory of fine art conservation, especially around issues of ethics. In 1963 he published his *Teoria del restauro* in which he emphasised the aesthetic value and uniqueness of artist creation. The moment of creation encompassed the artists’ intent and the artists’ use of materials that were impossible to return to their original state. In other words, the artistic concept was as important to the historical relevance of the artwork as the art itself (Brandi 1996[1963]). In this view, aesthetic values were very important and had to be taken into account when making decisions for conservation (Jokilehto 1999:231-243). Another important remark which influenced many contemporary conservators was that ‘the object is constantly reborn in the minds of those who see it and it is undergoing a multitude of transformations in the process’ (Van de Wetering 1999).⁷⁶ However, Brandi did not answer the question of who decides on conservation treatments. As I will show in Section 2.6, this issue is important to contemporary heritage politics.

⁷³ A similar situation happened in the Netherlands where researchers from the Dutch Industrial Research Institute (TNO) started the Central Research Laboratory for objects of art and science (now merged with the Cultural Heritage Agency (RCE)). However, in other countries (and other museums), laboratories were research institutes of the museums. (Private conversation with conservator RCE IJsbbrand van Hummelen, 19 April 2013).

⁷⁴ Known as the International Institute for Conservation of Historic and Artistic Works (IIC) since 1959. See *The International Journal of Museum Management and Curatorship*, Vol. 1, No. 2 (1982 June), pp. 159-61 and Clavir (1998).

⁷⁵ See *Museum News (American Association of Museums)*, Vol. 47, No. 10 (1969 June), pp. 11-14.

⁷⁶ This phenomenon is particularly important in the light of new media and site-specific art projects; but is, I argue, often ignored or not acknowledged by conservators and others working in the field. It is often claimed that these new art forms are problematic because they change media (and supposedly content or behaviour) in response to where and when the work is shown (Pullen 1999:300). I believe that those making these assumptions are blinded by the newness of equipment and new materials available to artists, forgetting that even traditional art objects transform over time, not only under the influence of ageing and changing of material but in the minds of the beholders. I elaborate on this issue in the case studies.

Preceding Brandi's *Teoria*, a heated discussion took place in London concerning the cleaning of paintings at the National Gallery, affirming the antagonism and rivalry in conservation. This so-called 'cleaning controversy' started in the mid-1940s and culminated in subsequent years. Two opposing camps disputed over the most appropriate way to clean a painting (Clavir 1998; Caple 2000; Muñoz Viñas 2005). Their disagreement was over the best way to do this in fine art: using scientific methods or referring to art history for interpretations of artist's intent (Dykstra 1996).⁷⁷ Although the concept of 'intention' has been intensely debated outside of conservation theory,⁷⁸ the concept and quest for the artist's original intent has always and still does play an important role in the decision-making and interpretation of artworks (Van Saaze 2009:49-50). Steven W. Dykstra is one of the few conservators who attempted to develop a clear understanding of the notion of artist's intention in art conservation.⁷⁹ He traced the origins of the 'intention principle' to the late Nineteenth century when it became scientifically possible to distinguish between original materials and later alterations or added materials. As history shows, scientific examination was an important means to ascertain artist's intent (Van Saaze 2009:48-50). But during the 'cleaning controversy', debates surrounding intent split conservators into two camps: aesthetic conservators, led by the beliefs of art historian Ernst H. Gombrich (following Brandi), who claimed that aesthetic and historical interpretation should take precedence over technically determined explorations,⁸⁰ and scientific conservators led by Helmut Ruhemann, Director of Conservation of the National Gallery (UK).⁸¹ Ruhemann insisted that

scientific observation, study, and experimentation validates systematic art conservation technologies and that consistent application of these technologies accurately exposed, preserved, and truthfully presented the materials originally laid down by the artist. (...) The intentions of the artist were served equitably, without interpretative distortion' (Dykstra 1996:201).⁸²

This debate is characterised as the first international public debate on fine art conservation (Dykstra 1996; Jokilehto 1999; Muñoz Viñas 2005). At the same time it set the tone for a new phase in conservation theory. Following World War II, science and the technological study of artworks played

⁷⁷ It is important to remember that although there is general agreement between the two opposing camps, in practice there is likely to be less controversy, not to mention varied opinions within and between countries and continents (Sease 1998; Clavir 2002; Ashley-Smith 2009).

⁷⁸ The debate started with the article by Wimsatt and Beardsley 'The Intentional Fallacy' (1946), in which they asserted that the design or intention of the author is neither available nor desirable as a standard for judging the success of a work of literary art. A position later followed by Roland Barthes in *The Death of the Author* (1968). For an elaborate analysis of the debate and its consequences, see, for example, Dickie and Kent Wilson (1995), and Muelder Eaton (1998).

⁷⁹ Most discussion about intentionalist and anti-intentionalist occurs in philosophical and literary debates. See, among others, Kuhns (1960); Olsen (1977); Carroll (1999).

⁸⁰ Gombrich published a few articles in the *Burlington Magazine* expressing his views about the National Museum's restoration practices. See among others: Gombrich (1962), see also Brandi (1996[1949]).

⁸¹ In his article 'The Artists's Intention and the Intentional Fallacy in Fine Arts Conservation' (1996), Dykstra refers to these camps as Positivist and Anti-Positivists, terms taken from social science. On the one hand, the so-called Positivists located the roots of truth and knowledge in positive observable facts and measured their relations to each other and to natural law. In reaction, Anti-Positivists defended the validity of human experience and knowledge. (Dykstra 1996:198). According to Dykstra, these terms were irrelevant and became 'aesthetic and scientific conservation' when another cleaning controversy arose in 1977.

⁸² Around the same time as the debate in the National Gallery, later known as the Ruhemann-Gombrich debate in literary and philosophical circles, an article by Wimsatt and Beardsley 'The Intentional Fallacy' (1946) spurred debate around the concept of artist's intent but ignored scientific or technological considerations (Dykstra 1996:198). However, according to Dykstra, unlike philosophers, historians or art and literary critics, they did not separate along intentionalist and anti-intentionalist lines. For an extended discussion of the debate, see Carrier (1985), Dykstra (1996).

an increasingly prominent role in conservation studies. This approach is commonly referred to as ‘techno-scientific’ or the ‘new scientific conservation theory’ (Philippot 1996[1983]; Muñoz Viñas 2005).

The theoretical debate surrounding the role and influence of science in conservation was not new but the ‘cleaning controversy’ in the National Gallery highlighted the problems that were attached to the use of scientific analyses of art objects. It is particularly interesting as it was discussed publicly.⁸³ In the course of history, similar debates surfaced whenever major artworks were restored. For example, in 1977 at the National Gallery of Art in Washington, the cleaning and restoration method of a Rembrandt painting revived old controversies between scientific analysis and aestheticism.

2.4. The decline of objectivity and scientific research in conservation

The prevailing stance of scientific research is that it is not based on subjective feelings or impressions, but objective ‘hard’ facts, such as precise measurements, and the systematic study of structure and behaviour through observation and recurring experiments developed under controlled conditions. Scientific research is generally regarded as superior, objective and something to strive for.⁸⁴ The widespread belief is that facts speak for themselves and therefore no other reflection appears to be necessary. As such, science in conservation brought a sense of ‘relief from confusion and criticism caused by idiosyncratic or arbitrary restoration practices of the past’ (Dykstra 1996:200). Despite all of the discussions and debates, the scientific paradigm continued to play a major role in traditional conservation theory for reasons already mentioned: the role of science in European and American societies since the Enlightenment and the publishing and distribution of books that spread ideas that the physical could be classified in a logical manner. As Caple notes, science dominated society:

Objects provide evidence (physical proof) about past and present-day societies; specimens exemplify the extent and nature of the natural world; devices demonstrate scientific principles, and works of art articulate emotions, ideas, aesthetics, and explore symbolism and meaning in society. (...) [All these together] constitute our proof, the physical evidence, for almost every facet of the development of humankind and almost every aspect of the forces of nature (2009:26-27).

The dominant position of science in conservation is regarded by some authors as one of the reasons why there was very little development in the field. Several even state that scientific conservation has not evolved since its ‘establishment’ at the end of the Nineteenth century (Muñoz Viñas 2005:75-81; Sánchez Hernampérez 2004).⁸⁵ People adhered to what they knew, but were anxious about trying new

⁸³ For the most part, these discussions took place in *The Burlington Magazine* (see also n. 80).

⁸⁴ See, for example, Clavir (1998) and Caple (2000) who describe scientific conservation after World War II in retrospect as a positivist period in which science was regarded as the ultimate answer to conservation analysis and new tools were used to study material processes.

⁸⁵ Although it goes beyond the scope of this research, it is remarkable that it took almost 50 years before the arts, and the non-architectural conservation world, started to effectively incorporate science in conservation methods. Muñoz Viñas blames this on the traditional division

experiments or methodologies, especially when faced with extremely rare and valuable objects. At the same time it can also be argued that these insecurities are related to the fact that scientific conservation deals with materials and not with ideas. It uses tools to capture and experiment with the material world in the same ways that 'hard' science does (Muñoz Viñas 2005:80). These methodologies were sometimes difficult to translate or use when dealing with irreplaceable objects based on conceptual ideas. In these cases a quest for objective truth and the use of scientific experiments in conserving art objects was hard to maintain. In addition, the lack of time and money often became important concerns that were difficult to overcome. In order to properly show results, scientific experimentations required long periods of sampling, testing, experimenting and cross-referencing. These required time and money, which was extremely scarce in most cases. But there were other factors at play, which better exemplify the difficulties sustaining scientific methods in art conservation and ultimately led to a decline in professional confidence in science during the 1980s.

One of these factors is that scientific analysis is most successful in lab settings, where isolated phenomena can be dealt with. Many art objects, however, are complex and their materials behave in unpredictable ways. This is true for organic materials like paper, solvents used in paints, inorganic stones, and technical equipment that are mass-produced.⁸⁶ Objects are never truly identical, which makes it very difficult to compare them, or make them resemble each other. And even if two objects are the same, it is highly unlikely that they have been exposed to the same circumstances and conditions (Muñoz Viñas 2005:126). This notion of uniqueness is in itself problematic for science, but becomes particularly problematic in regard to conservation objects, because most objects have been made in even less controllable circumstances (Muñoz Viñas 2005:125). This practice and use of less controllable material accelerated after the 1940s when artworks were created with more diverse and different combinations of materials, including historically new materials with unknown degradation properties like plastics. In some cases this could lead to rushed assumptions. For example, and to stick with the topic of this dissertation, it is often thought that software or code are easier to reprogramme, as they consist of zeros and ones, which in theory, can always be reconstructed as long as one knows how to compile the code. However, in practice it is often extremely difficult to trace the various changes that are made over time. As mentioned, the ambiguous character and use of code does not help this situation.⁸⁷ I will return to these assertions in the chapters to follow. For now, it is safe to say in regard to conservation of most art objects, scientific methods are at best able to claim probabilities that make (often inaccurate) predictions about future states.

Another problem that led to the decline of scientific methodologies was the 'trial and error' approach that is still generally practiced in scientific research. With the 'trial and error' approach, a

between architecture and other arts, where architecture has always been regarded as superior to other art forms (Muñoz Viñas 2005:71-74).

⁸⁶ Exemplary of this phenomenon is the presentation of media art installations with multiple projectors: one projector will never be identical to another. For example, the light luminosity might be more or less, depending on the lifetime of the lamp. Or the internal electronics might have been fine-tuned differently. However slight, the results will show differences.

⁸⁷ In the Netherlands, the Royal Library and the City of Rotterdam are taking Internet archiving very seriously. Nevertheless, they have not (yet) addressed net artworks, due to their complex nature (30 November 2009; public discussion 'Born Digital Material: (how) do you save it?').

scientist takes several samples that are then compared to distinct materials from different points in time for cross reference (Torraca 1999; Reedy and Reedy 1992). Taking samples of sensitive objects can easily inflict damage to the unique materials. Such invasive techniques can of course be highly problematic and have already led to heated debates (hence the previously mentioned reluctance to experiment). Furthermore, a removed part may obscure evidence of earlier practices, and may similarly hinder future re-investigation or re-treatment (Pye 2009).⁸⁸ The idea of reversibility was therefore generally accepted throughout most of the Twentieth century. This meant that one should be able to reverse any treatment applied to an object. This attitude was questioned from the 1980s onward. The notion of ‘minimal intervention’ was generally acknowledged, because not a single technique was 100% reversible.⁸⁹ It was suggested that missing parts could be restored to previous states if there was enough evidence of those previous states to allow for a substantially ‘faithful-to-facts’ restorations. The limits of restoration were defined as the ‘minimal’ action necessary to achieve the goal (Ruhemann 1968; Jokilehto 1986; Muñoz Viñas 2009).⁹⁰ By this mandate, risks and responsibilities for both the object and the executor were reduced; however, it was an ideal in practice but never an actuality (Pye 2009:133). Moreover, it could lead to an attitude of ‘doing whatever you like’ as long as it is reversible, which could change the way conservation is viewed and practiced (Muñoz Viñas 2005:185-87). At this moment, however, physical laws demonstrated that most methods, for example cleaning or deleting code, were irreversible, and that reversibility – although desirable – was no longer seen as a useful method. It remains to be seen how definite this assumption is when taking into account techniques used in digital forensics, emulators or when considering notions of versioning in digital projects. I will return to these assumptions in Chapter 3 when analysing *mouchette.org*. A ‘trial and error’ approach can also be highly problematic from another perspective. Often a scientist will have insufficient historical information about an object or materials, which further complicates the issue by increasing the possibility of damaging objects during sampling. From this perspective, the Italian conservation scientist Giorgio Torraca compares scientists that are involved in conservation to gamblers because ‘even in their field of competence, most of the time they offer interpretations and solutions despite insufficient knowledge’ (1999:9).

I do not mean to suggest that scientific methods cannot be used in conservation or that conservation science is not useful. As Muñoz Viñas describes,

⁸⁸ In conservation, the notion of future re-investigation or re-treatment is also known as the principle of sustainability. The notion of sustainability surfaced around 2000. According to Muñoz Viñas it ‘explicitly acknowledges the need to take future uses and users into account’ (2005:196), thereby stressing the importance of long-term solutions and more importantly taking into account possible future users when decisions are made.

⁸⁹ The term ‘minimum intervention’ was already mentioned by Brandi in 1963 (1996[1963]) in reference to the practice of making minimal changes to a building. However, this approach can be traced to the beginning of conservation strategies. See, for example, Caple (2000:64) who pinpoints its origin in the writing and intentions of William Morris. As with the term, ‘reversibility’ minimal or minimum intervention poses challenges to the extent of the intervention, i.e., minimum to what degree? Muñoz Viñas (2009) revisited the term and argues for replacing ‘minimal’ with ‘balanced’. Furthermore, he argues for a principle that relates more on changes in meaning. He argues that ‘the principle does not call for any minimal intervention. Instead, it actually means something different and more involved: it mandates that conservation should enhance or preserve the preferred meanings of the object while impairing as little as possible its ability to convey any other meanings’ (2009:56). This and similar positions (for example, Laurenson 2006; Depocas 2003) clearly point to a new emphasis in conservation where the meaning of an object has become the primary focus.

⁹⁰ In the second half of the Twentieth century the notion of ‘minimal intervention’ started to be used as an autonomous and self-referential concept. For more on this see, for example, Caple (2000), Villers (2004).

Technical analysis allows for the detection of non-original parts; accelerated-aging tests predict the decay of original and conservation materials; chemistry allows the understanding of deterioration processes and helps in their prevention (2005:89).

Furthermore, as Torraca argues, inaccuracy and unreliability can also be viewed as normal consequences of conservation. This stresses his interest in conservation science, which combines (scientific) numbers and formulas with materials ‘of a different type (words and images) produced from the other culture, the humanistic one’ (Torraca 1999:11) that are often lacking in ‘hard’ science. Torraca favours analysts who are not only ‘real’ scientific analysts, but also analysts who take historical and social data into consideration.⁹¹ He rightfully argues that the scientist and the conservator would benefit from each other’s knowledge (Torraca 1999).⁹²

While some authors argue that conservators need to have a greater awareness of research practices (Hansen and Reedy 1994), others blame scientists for using abstruse technical jargon (Torraca 1999). However, it is agreed that an overall open communication structure between people from different disciplines and backgrounds would be beneficial for mutual understanding. Ideally, I propose – especially concerning the conservation of net art, installations or performances, where technical, art history and contextual knowledge are combined – that the roles of traditional conservators and of the curator become more intertwined. A science derived approach from the conservator would in this sense be helpful when analysing technical and historical elements of code and hardware; whereas a curator could have more knowledge about the aesthetic meaning of an artwork. Such a combination, as I will assert in coming chapters, is best served with ‘team meetings’.

2.5. A subjective truth: the significance of ‘value’ and ‘taste’ in conservation practices

Two more limitations undermine the search for science in conservation. Although outside the scientific realm, these arguments are important to aesthetic theorists, who in the last two decades have gained more relevance and awareness in conservation theory (Depocas 2001; Hummelen 2005; Muñoz Viñas 2005; Laurenson 2006). For aesthetic theorists, the quest for truth (to reveal the true nature or integrity of an artwork) is the primary goal of conservation. In their search, they argue for a ‘soft’ scientific approach (a science that relies on historical analyses or archaeology) that stresses symbolic and communicative functions in works of art (Clavir 1998; Muñoz Viñas 2005; Laurenson 2006).⁹³

⁹¹ This recalls the previously mentioned notion of the ‘three-legged stool’, see section 2.1.

⁹² For example, Sánchez Hernampérez (2004), Hansen and Reedy (1994), and De Guichen (1991) have analysed the importance of conservation science on a pragmatic level. They also stress the need for a better communication and training between conservators and scientists (or even for all museum professionals and beyond, De Guichen 1999). In addition, they call for the improvement of technical knowhow on the part of conservators, and acknowledge that science cannot solve every conservation problem. In this way, pragmatic solutions can be very helpful.

⁹³ This turn coincides with a broader investigation into the value and position of the museum. This so-called ‘new museology’ questions traditional museum approaches to issues of value, meaning, control, interpretation, authority and authenticity. See, among others, Vergo (1989); Handler and Gable (1997).

Many contemporary conservation theories question ‘objective’ as well as ‘truth-enforcing’⁹⁴ principles, emphasising the importance of subjective values and meaning in decision-making processes.⁹⁵

Arguments against the classical objective view of conservation rely on subjective judgements, perceived from two different angles: value and taste. (Muñoz Viñas 2005:105). The values that underlie conservation can be traced to art historian Alois Riegl. In his publication *Der moderne Denkmalkultus* (1996[1903]) he named value-based categories that are contained within monuments: the historical value, the artistic value, the age value, the use value, and the newness value. These sometimes conflicting values are said to have formed the basis for a theoretical and ethical approach to conservation activities (Muñoz Viñas 2005). For instance, these values played an important role in the previously mentioned ‘cleaning controversy’ at the National Gallery in London.⁹⁶ The results of the scientific cleanings were unacceptable to those who judged the work as too harsh. Among other things, the removal of dust and dirt changed the paintings by showing their ‘true’ bright colours; but in the process the experience of the past was affected. In addition to subsequent scientific debates about the methods used, a public discussion developed in *The Burlington Magazine*. This magazine, devoted to fine and decorative arts, became the platform for a heated and sometimes emotional debate by art historians and critics who argued about cleaning practices.⁹⁷ These emotional and symbolic values, or ‘newness values’, were important aspects for many people, but were often ignored in the objectivist approach simply because ‘value’ cannot be measured or objectively interpreted (Muñoz Viñas 2005:107).

The second issue, ‘taste’, is concerned with the practice of the conservator. Although there are ethical concerns, conservation relies heavily on taste. A conservator’s decision depends on the context, time period, and by whom the decision is made.⁹⁸ It is argued that this is more true for contemporary artworks since the values associated with contemporary art are generally more diverse and less clearly determined than with traditional art.⁹⁹ Since the early 1990s and the ‘democratisation’ of museums there have been more stakeholders at play, ranging from the general public’s opinion to international collaborations, funding bodies and commercial sponsors. These new stakeholders are not accustomed to, nor necessarily interested in, objective criteria. Nevertheless, they have become important voices in

⁹⁴ Muñoz Viñas describes traditional conservation as a ‘truth-enforcement’ operation, which is accompanied by the attending notion of the ‘original condition’ (2005:65).

⁹⁵ In 1999, during the symposium ‘Modern Art: Who Cares?’, a new decision-making model was made for ‘contemporary’ art in which meaning was more prominent. It was argued that in traditional art ‘material and technique serve the meaning, which is largely determined by the representation’ (Hummelen and Sillé 1999: 164-72).

⁹⁶ The example is also interesting because it highlights the tautology between ‘authenticity’ and the original condition of the painting. I will return to these debates in Chapter 3 and particularly Chapter 6.

⁹⁷ Letters were printed in *The Burlington Magazine*. Among others in vol. 104, no. 707 (February 1962:51-55); vol. 105, no. 724 (July 1963:327) and vol. 105, no. 726 (September 1963:410-413). <http://www.burlington.org.uk/>. For an extensive account of the public debate and the opinions around the cleaning of paintings, see Lowenthal 1985:125-47.

⁹⁸ For a general discussion and analysis on taste, see the sociological report ‘Distinction’ by Bourdieu (1984[1979]), in which he proposes that the powers in a society define aesthetic concepts such as taste, and by means of that definition it is the social class that tends to determine someone’s interests, likes, and dislikes, and also how such social distinctions are reinforced in daily life.

⁹⁹ See, among others, Sease 1998; Wharton 2005. About the transformations of the role of the conservator of contemporary art and the changes in practice, see Clavir 1998, 2002; Depocas 2001; Laurensen 2006; and others. This relatively new research area has also led to a large (and ever growing) number of conferences. In part, these conferences were organised with the goal of publicly sharing knowledge. Clearly, my research builds on this large body of work.

terms of presenting more diverse values and tastes. It could be argued that a subjective stance is inherent in conservation practices. Furthermore, due to the many museum liaisons, a subjective stance is a requirement for conservation to be acceptable (Muñoz Viñas 2005:113).

With the introduction of more (non-Western) perspectives in conservation theory it is even more clear that ‘taste’ and ‘value’ are not universal standards, but particular norms associated with specifically embedded social histories.¹⁰⁰ Notable in this sense is the work of Clavir (2002), who vividly described and analysed the underlying problems of a singular Western perspective. For example, for many First Nations,¹⁰¹ preservation is inseparable from traditions, oral history, community and identity (Clavir 2002:xvii). From this perspective, it is not the object that is the centre of attention, but the cultural life of which the objects are part. In other words, meaning is constituted *through* the object and is not necessarily or solely held *within* the object.¹⁰² Such a perspective is useful when thinking of conservation of net art because it also includes many different fields of knowledge. The works change meaning as they progress through history and can consequently be interpreted in different ways by different people.¹⁰³ What remains is the question: On which basis are criteria and decisions made? To make decision processes more transparent, as I will show in Chapter 4, issues of provenance, and more recently mandates that future users and context be taken into account in decision-making processes and documentation models, are important factors in conservation practices.¹⁰⁴

2.6. Contemporary conservation theory

During the 1980s the claims to ‘objectivity’ and ‘truth-enforcing strategies’ slowly transformed into a search for meaning. This meant that a new set of concepts entered the conservation field – concepts such as significance, meanings, language, diversity, collective memory and identity became important issues (Pereira 2007). Muñoz Viñas refers to this period as the ‘communicative turn in conservation’ (Muñoz Viñas 2005:147-70).¹⁰⁵ Conservation was more frequently regarded as a social process. Conservation entered a new phase that deliberation is still maintained today. Contemporary conservation theory believes that artistic merit, style, colour, shape, material, etc., are ‘meaning-

¹⁰⁰ Nancy Marie Mithlo as quoted in Clavir (2009:145). In much of her writing, Mithlo demonstrates that contests of identity are fought not only between self-representations and outside representations, but that there is even disagreement within groups about the nature and content of self-images and identity. Her particular interest is in analysing reductionist approaches that contradict the necessary interrogation of multiple knowledge systems, organisational values, and individual identities in cultural heritage debates (see, for example, Mithlo 2004).

¹⁰¹ First Nations are characterised by Clavir as a term used in Canada by and for indigenous or Aboriginal peoples. I use the term in the same way here.

¹⁰² Clavir summarises the differences between the beliefs and values of museums and First Nations very clearly (2002:76-84 and 213-6). Clavir also addresses the different perspectives on material culture (2002:134) and perspectives on use (2002:148-9).

¹⁰³ Also see Buckley (2005) for the difference between Western and non-Western, in this case Gambian, perspectives on archiving. On the problem of using classification systems and standards in general, see Bowker and Star (1999).

¹⁰⁴ See *Matters in Media Art*, initiated in 2003 by a consortium of curators, conservators, registrars and media technical managers from New Art Trust, MoMA, SFMOMA and Tate, to provide guidelines for the care of time-based media art (e.g., video, film, audio and computer-based installations). Another consortium, *Inside Installations*, followed with similar research: a three-year research project (2004-2007) into the care and administration of installation art. These and other models are analysed and compared in Chapter 5. For a more theoretical elaboration on the issue of provenance see, among others, Clavir (2002, 2009).

¹⁰⁵ Sociologist and philosopher, Jürgen Habermas (1984[1981] and 1989[1981]), for example, is an important reference in these debates. In *The Theory of Communicative Action, Vol.1 and 2*, he explained the function of deliberation and open exchange of ideas.

bearing' features and not 'truth enforcers'. Artworks give meaning to people and as such should be valued. The acknowledgement and value of people who are directly affected by artworks should be the point of departure, as it sets a new hierarchy of interpretation. As Muñoz Viñas stresses:

It is the affected people who best know what meanings the object possesses, and how it will best convey those meanings; it would not be ethically correct to impose a different point of view just because someone has some expertise in art history, in organic chemistry, or in stone conservation technique (2005:201-2).

Interpretation and subjectivity are acknowledged as important factors and valuable attributes in decision-making processes. From this perspective, contemporary theory of conservation is based on *negotiation* (Avrami et al. 2000; Staniforth 2000), *equilibrium* (Jaeschke 1996; Bergeon 1997), *discussion* (Molina and Pincemin 1994), and *consensus* (Jiménez 1998; Cameron et al. 2001).¹⁰⁶

Following the communicative model, public opinion and expertise were imperative in conservation research, but this also led to new difficulties: Whose perspective was the leading or final, if there were disagreements? To structure this problem, several tools, including decision-making models, were developed to acknowledge different stakeholders and provide structure and insight into decision-making processes (Van Saaze 2009:71). At the same time, the communicative model tended to neglect the material qualities of the work and its history.¹⁰⁷ In spite of these difficulties, the communicative model opened up the field of conservation to new insights that gave voice to various stakeholders. This also raised concern, as things have different meanings to different people, in different contexts and during different time periods. Furthermore, the notion of 'cultural significance' is very subjective and can change over time. Therefore, in research it is imperative to ask when, why, in what other context, and for whom the conservation is done. Many contemporary theorists and conservators advocate this open attitude (among others Clavir 2002; Muñoz Viñas 2005; Laurenson 2006; Richmond and Bracker 2009). As a result, art historian Caroline Villers notes that the term 'true nature' was stricken from the 1996 United Kingdom Institute for Conservation (UKIC) guidelines for conservation practices (Van Saaze 2009:52). At the same time interest in scientific conservation is as robust as ever. For example, advances in DNA and laser research have re-opened many old cases and led to new insights.¹⁰⁸ Nevertheless, there is a need and desire for transparency on the topic of conservation, especially in contemporary visual art writing and at international conferences. This is not unsurprising as the nature of the works demand new approaches.

¹⁰⁶ See Muñoz Viñas (2005:163).

¹⁰⁷ Van Saaze further elaborates on the issues and challenges faced by this new phase in conservation, and considers the downside of following the communicative model (2009:68-97).

¹⁰⁸ See, for example, Van Bommel (2012) or 'IMA Conservation Science Laboratory unveils original state of van Gogh painting' 16 April 2014, http://artdaily.com/news/57398/IMA-Conservation-Science-Laboratory-unveils-original-state-of-van-Gogh-painting#.U04_3ccx8uw.

2.7. A short overview of new approaches and strategies in conservation

To briefly summarise, the theory and practice of conservation started from the questions: How should culturally significant artefacts, like works of art, be preserved to their authentic state (or as close as possible)? And if needed, should they be restored by means of intervention? Previously, conservation research focused on conserving the physical object with the help of scientific and art technological research. However, conservation strategies changed with the introduction of (or return to) more unstable, ephemeral, and live art practices from the early Twentieth century onwards. The conceptual, unstable, variable or process-like character of many contemporary artworks challenged the conventional object-oriented approach of fine art conservation. Unlike traditional painting and sculpture, contemporary artworks often included ephemeral materials and technologies that quickly become obsolete.¹⁰⁹ Moreover, as mentioned earlier, contemporary art forms such as net art (but also conceptual art, much installation, land art, performance art, etc.) were not always made to last for eternity. They inherently address the notion of variability within their own conceptual framework. Such changes can involve variable presentation formats and/or unsustainable materials. Consequently, it seems logical to move away from a fixation on the conservation of an artwork's physical components, as it would most likely turn out to be counterproductive. Some conservators have approached these challenges.

Important steps have been made in this direction by several collaborative research projects, among them the Variable Media Network, Matters in Media Art, Inside Installations and DOCAM.¹¹⁰ I elaborate on some of these projects in Chapter 4. For now, it suffices to say that three basic notions underlie the methodologies of these initiatives: (1) enabling artists' participation as much as possible; (2) flexibility in approaches and methods; and, (3) openness (provenance and transparency). This way of thinking confirms the necessity to relinquish traditional conservation methods that focus on re-creation and develop new ways of documenting obsolete artworks. In addition, it invites new approaches to conserving works of art. As such, Head of Collection Care Research at Tate, Pip Laurenson (2006) suggests that the focus of conservation must move away from the purely material to include the original function and contextual meaning of the artwork. In her exploration of a conceptual framework for the conservation of time-based media installations, she concludes that:

The reference 'state' of an object has been replaced with the concept of the 'identity' of the work, which describes everything that must be preserved in order to avoid the loss of something of value in the work of art.

¹⁰⁹ This may seem as an overstatement and in most cases it will be. However, especially when working with commercially dependent software, it happens that configurations change without prior consent (private conversations with artists/developers).

¹¹⁰ The variable media concept was developed in 1998 by Jon Ippolito, who at that time worked as a conservator at the Guggenheim Museum, and whose later efforts spawned the Variable Media Network. This network proposes an unconventional preservation strategy based on identifying ways that creative works might outlast their original medium: <http://www.variablemedia.net>. DOCAM Research Alliance was created by the Daniel Langlois Foundation for Art, Science and Technology (DLF) in 2005. Numerous partners from Canada and abroad – from the academic sector and from a community of interest – have joined the Alliance. Over the project's five-year mandate its main objective was to develop new methodologies and tools to address the issues of preserving and documenting digital art, technological and electronic artworks: <http://www.docam.ca>. For Matters in Media Art and Inside Installations see n. 104.

In other words, as opposed to the traditional view taken in the conservation of fine arts, it is not necessarily the material object that is considered to be most valuable, but rather the intrinsic qualities of the artwork that give viewers certain experiences. The value of a net artwork does not necessarily reside strictly in the materiality of the medium itself, but in a number of contributing elements that, together, establish the work's aesthetic qualities. What is interesting to note here is that, along with these more conceptual changes in understanding conservation, the Variable Media Initiative proposes new ways of dealing with the preservation of technical components. Their approach seeks to offer choices ranging from the storage of a work and the acceptability of emulation or migration strategies to the artists' refusal of any modification to their works, which consequently leads to its 'death'. What the Variable Media approach proposes is the 'idea of endurance by variability' or 'permanence through change' (Depocas et al. 2003). According to Jon Ippolito (2003:47-53), four possible strategies can be used (depending on the artist's approval) in the conservation of a work:

1. Storage: storage of the physical work (hardware, equipment or archive digital files on disk). The disadvantage of storage is that the artwork will expire once ephemeral materials cease to function.
2. Emulation: imitation of the original look of the piece by completely different means. Possible disadvantages are high financial costs and inconsistencies with the artist's intent.
3. Migration: involves upgrading equipment and the source material of the work. The major drawback is that the original appearance of the artwork will change in its new medium.
4. Reinterpretation: reinterpretation of the work each time it is re-created. It is a dangerous technique when not warranted by the artist, but it may be the only way to re-create performance, installation, or networked art designed to vary with context.

Following the initial research of the Variable Media Network, the Guggenheim Museum, in partnership with the Daniel Langlois Foundation, organised the exhibition *Seeing Double* (2004) to test the potential of these experimental conservation treatments for new media artworks. Among them was JODI's *Jet Set Willy* ©1984, which I discussed in the introduction. The exhibition presented a series of original artworks paired with their emulated or migrated versions. I will return to the benefits of emulation in Chapter 4. *Seeing Double* offered a unique opportunity for art experts and the public to directly compare both versions and decide for themselves whether the re-creations captured the spirit of the originals. The exhibition generated insights into the workings and reinstallation of various works — all of them developed in consultation with the artists — and beyond, showed that there was a public interest in these previously 'hidden' practices. 'Behind-the-scenes' exhibitions have become increasingly popular and one can argue that the public's understanding and appreciation of the artwork increases when these issues are made accessible. This might ultimately lead to a new conservation paradigm where public interference with and questioning of conservation practices may lead to more

inclusive approaches (Roms 2008; Muller 2008).¹¹¹ When it comes to presentation and preservation of non-traditional museum artworks, *Seeing Double* also brought to light challenges that were connected to the differences between works housed within museum collections and those outside of an institutional context. Reflecting on the exhibition, it can be argued that traditional preservation approaches conducted by museums are often insufficient when applied to net art. More flexible models and interdisciplinary collaboration is needed to tackle digital conservation (Jones and Stringari 2008).

2.8. Summary and next steps

In this chapter I explored the history of conservation theory and practice, from traditional to contemporary notions. It is clear that for many decades conservation has led a secluded life in which the practice has not changed much. It was apparent from the beginning that conservation was divided into two camps. Simply put, the area of conservation was separated into scientific and aesthetics sections. As a result of this discord, heated public debates that related to large national and international painting-cleaning projects took place. It is argued by some that conservation ethics evolved through such debates and conflicts (Beck and Daley 1993; Caple 2000). Although there is some truth in this statement – there have indeed been controversial cases that have pushed the boundaries of conservation ethics – it leaves out numerous other factors at play. Similarly, controversy is in itself is not a bad thing. Perceptions – and consequently interpretations – change throughout history. Problems arise when these changes are regarded as controversial because they contradict previously held beliefs. But issues will not be clarified by perpetuating discussions in terms of polarised stereotypes, nor will they provide a framework within which evaluation and further analyses can progress. Nevertheless, it is undeniable that some of the controversies, which were played out in public discussions, have led to a devaluation of works of art as well as lost jobs.¹¹² What this remark highlights is that the profession of a conservator can be hazardous, a ‘high-risk activity’ (Van Saaze 2009:41).

Following this line of thought, I argue that these controversies resulted in a reluctance to come forward with ideas, or at the very least they perpetuated feelings of uncertainty when making decisions. This ambiguity, almost embedded in the practice, has surprisingly received little attention, which has amplified attitudes of concealment more than anything else.¹¹³ A ‘cautious’ attitude is also reflected in the practice itself, as Van Saaze notes:

¹¹¹ This might also be one of the reasons why more attention is paid to implementing oral histories in conservation today. Muller focuses on media art installations and argues that documenting audience experiences with new media art better explains and emphasises interaction, system, and generative processes in new media art. Roms discusses primarily anecdotal evidence of engagement with performance. In particular, she focuses on Welsh performers with whom she organised public conversations. She also emphasises that the appreciation of the authenticity of the past is more dependent on the observer’s perception and not on what the observed communicates.

¹¹² See, for example, the effects of the ‘Newman-affair’ as described by Ex (1993).

¹¹³ Jonathan Ashley-Smith has written several texts dealing with ethical issues and related matters concerning the restoration, exhibition, loan, and transport of artworks. For example, ‘Let’s be Honest’ a talk presented at the IIC conference, Preventive Conservation: Practice, Theory and Research, Ottawa, Canada, 15 September 1994: <http://cool.conservation-us.org/byauth/ashley-smith/honest.html>.

Historically preservation issues are concealed and confidentiality agreements are quite common to conservation practices (...) deliberation processes and conservation treatments took place behind closed doors, cautiously concealing them from the museum public (2009:23).¹¹⁴

I argue that even if such feelings of uncertainty were not directly awakened by science, they did strengthen the role of science in the development of conservation. Widespread faith and acceptance in 'objective' and independent methodologies allowed conservators to hide behind the methodology with an image of confidence and certainty. The lack of open discussion among conservators (even those working in the same institute) intensified this belief, and asserted the authority of a 'superior' conservator.¹¹⁵ At the same time, conservators remained cautious out of fear that trying new and different methods could backfire and undermine their status. I believe this apprehension for the new is also one of the reason why conservators (and curators) are reluctant to discuss the conservation (or presentation) of net art. They prefer to stick to their well-known fields of interests in which they can build on works that have been recognised and validated in the past. It is often said that conservation depends on feelings that cultural epochs have something to offer the present.¹¹⁶ Taken one step further, it is also claimed that an increase in attention on conservation is seen as a fear of the present and an aversion to technical progress (Lowenthal and Binney 1981). Although this is a rather bold statement, these and the previously mentioned reactions form the basis for an understanding of the psychological developments in conservation theory.

In his article 'New Media Art and the Gallery in the Digital Age' (2008) Charlie Gere analyses how 'new media art' is received and understood by galleries and museums. As he argues, museums and galleries affect an understanding of and access to the past, as well as a relation to the future. As such, they are 'fundamentally bound up with the structure of the gallery as an institution, its understanding of its role, its intentions and duties, and even its physical embodiment' (2008:24). I would agree, and moreover stress that it is the structure of management thinking that prevents change.¹¹⁷ This is exemplified by net artist Olia Lialina, who in her article 'About Exhibiting Net Art' (2000), aptly describes the underlying problem of acquisition and conservation of net art by museums. She recounts her observations and experiences from the time she became an (net) artist:

What to do with net art? How to deal with it? How to include something in a collection that cannot be stored on a shelf? Everything would be so much easier if net art was just web art,

¹¹⁴ The notion of confidential conservation is still debated among conservators. Whereas some conservators feel that the condition and treatment reports are confidential, others feel that to maintain the professional nature of conservation, and to best protect the artwork, the free exchange of information, including access to these types of records should never be denied. Even though laws around confidentiality are straightforward, the perceptions of the issue within the profession are not. For a more detailed account, see Stavroudis et al. (1986). For the relative absence of discussions in the context of contemporary art, see Learner (2008).

¹¹⁵ The individual character of the profession added to this status. The conservator was and is someone with specialised knowledge only applicable to their specific field. This has led to stereotyping but also to isolation from others involved (e.g., curators, lawyers), resulting in many cases of miscommunication. It is only recently that the decision-making process moved to a more open debate, leaving the traditional stakeholders behind. For a more elaborate discussion on the status of the conservator see, among others, Caple (2000:182-99); Muñoz Viñas (2005).

¹¹⁶ Hunter, M., in: Lowenthal and Binney (1981:25).

¹¹⁷ Also see Dekker (2013:3-11).

consisting of hypertext-pages with funny animations and experiments with browsers (which is the case with the few interesting projects). In this case, one could just buy the work and store it on the server of the buyer. But how does one deal with works of which the main concern is by no means websites on a server, but the journey which starts there and cannot be controlled? Works that are strictly defined as net artworks contradict the logic of proprietarial thinking. Contradict the old logic of proprietarial thinking. And contradict the old logic in general.¹¹⁸

Lialina's remark is a direct instantiation of my earlier argument that net art challenges traditional thinking in conservation, in which a past prevails over the present or future. However, 'conservation as process', an approach to which I return in more detail in Chapter 5, could direct its attention to the present, while guiding future instantiations.

It has become clear that the role of science in conservation is not uncontested. In the past two decades many have probed the premise of objectivity and queried the credence of scientific truth and neutrality at conferences and in publications. New methods were developed out of critical self-evaluations by, among others, Ashley Smith, Muñoz Viñas, Clavir and Villers, to deal with art objects in different ways. One could speak of a philosophical shift from scientific, objective, materials-based conservation to recognition that conservation is a socially constructed activity with numerous stakeholders. This process intensified and evolved due to the introduction, among other factors, of non-Western ways of thinking and more technology-based artworks, which called for new solutions.¹¹⁹ The search for 'meaning' is now central to many conservation practices. In the case of net art, without understanding the meaning of a work from the perspective of the artist's intent or in a technical way (either assigned by the makers or as being inherent in the work), future audiences or caretakers can omit important considerations or make assumptions based on everyday use of technology. It is apparent that scientific analyses and methodology are not enough, neither is a purely aesthetic approach. Media artworks are technical *and* aesthetic and both are deeply implicated in each other. When dealing with media art (and moreover with net art and software art), a combination of strategies has to be addressed. However, even though training and education are changing, and decision-making models are bringing disciplines together to encourage trust and mutual understanding. In practice, there is a tendency to 'group think' within personal or disciplinary limitations, which can slow the pace of change.¹²⁰ A conservator – or better a 'team conservation'¹²¹ – of net art has to work with

¹¹⁸ Personal translation from German: Aber was soll man mit net art anfangen? Wie soll man damit umgehen? Wie soll man etwas zu einem Teil der Kollektion machen, das man nicht im Regal aufbewahren kann? Es wäre alles wesentlich leichter, wenn net art einfach web art wäre, wenn also net art aus Hypertext-Seiten mit witzigen Animationen und Experimenten mit dem Browser bestünde (was auf die wenigen interessanten Projekte zutrifft). Dann könnte man die Arbeiten einfach kaufen und auf den Server des Käufers legen. Aber wie geht man um mit Werken, bei denen die Hauptsache keineswegs die Webseiten auf einem Server sind, sondern die Reise, die von dort ihren Ausgang nimmt und die man nicht kontrollieren kann? Ausdrücklich als Netzkunstwerke definierte Arbeiten widersprechen der Logik des Besitzdenkens. Der alten Logik des Besitzdenkens. Der alten Logik überhaupt. (Lialina 2000)

¹¹⁹ See, for example, the accounts by Clavir (2002, 2009) and Mithlo (2004).

¹²⁰ See, for example, Drysdale (1999) who highlights the potential limitations of this approach. She describes the conservation lexicon and shows the impotence of a discourse based on efficacy.

¹²¹ Wharton and Molotch (2009) acknowledge this new way of working in which they emphasise that sustaining media art involves 'a collection of expert individuals'. At the same time, it also needs adjustments on the part of the internal structure of a museum. San Francisco Museum of Modern Art is one of the first large museums who have set up a 'Team Media', consisting of managers, curators, conservators, technicians, and IT specialists from inside the museum. Decisions about acquisitions, presentation and conservation are discussed in monthly meetings. Although problems are discussed between different people on a meta-level, the practical work stays with allocated specialists and direct conversations only happen (occasionally) on a natural basis (based on conversations with Rudolf Frieling, during 'The New Media Art

people from outside the museum (artists, programmers, and other specialists) and must also deal with physical, institutional and technical contingencies. This knowledge is most of time outside of traditional scopes and resides under the authority of the artwork creators.

In the next chapters I explore how – under the influence of net art conservation strategies – practices focused on documentation can expand and evolve contemporary conservation. As a practice, conservation has always changed the ‘authentic’ state of a work (if one can speak of such a state). When dealing with net art, conservation has to come to terms with change in a more radical way. As such, I argue for a new understanding of conservation theory that embraces change and variability as inherent qualities of the artforms considered, and consequently of conservation itself. Through case studies outside of museum structures, I show that mandates to collect and preserve are not universal standards, nor can they be applied as such. By looking at these ‘outside’ strategies, I argue, museums could better deal with their own collections. Furthermore, it would enable them to better participate in decisions about the conservation of net art.

It is often argued that net art poses many problems for conservation, because it has many technical challenges (hardware and software). In the following chapter, I draw attention away from the strong desire to regard objects as whole and complete by looking at different ways to address the issue through the case study *mouchette.org* by Martine Neddam. Addressing methodologies used in media archaeology, I counter the traditional assumption that an object has greater value in its complete state rather than as a reconstruction. This chapter also contests the notion that, from a technical as well as a conceptual point of view, net art is more challenging than traditional artworks to conserve.

Whereas Chapter 3 is an extended contextualisation of current conservation practices, in the chapters that follow I will discuss approaches that move beyond such practices. In Chapter 4 I focus on documentation as a conservation method to ensure future re-creation of artworks. More specifically, I examine the consequences of such methods in net art conservation. And vice versa, I question how artists’ documentation methods can be of help in wider conservation practices. Additionally, I intend to demonstrate that documentation facilitates the creation of new versions, thus building, elaborating and commenting on the previous states of an artwork. This will open new ways of thinking about what conservation means while provoking new ways of dealing with the function of documentation and the structure of museums. I explore this conclusion in more depth by analysing the case study *Naked on Pluto* in Chapter 5. I argue that since net art is processual, moreover depending on networks, it cannot be conserved. Only certain things can be captured and saved. The loss of some parts of the work leads to new possibilities and potentials.

3. Conserving variability: *mouchette.org*

In 2011, I organised *NetArtWorks*, a series of small thematic online net art exhibitions that I curated for SKOR (Foundation for Art and Public Domain) in Amsterdam. Each presentation, on the theme of Identity Works, consisted of two newly commissioned artworks in combination with an existing iconic artwork. *mouchette.org* (1996) by Martine Neddham fit the theme perfectly.¹²² While talking to Neddham we discussed the exhibition of *mouchette.org* on SKOR's website, which led to questions that commonly plague conservators when planning conservations strategies. Would *mouchette.org* be mirrored or embedded in SKOR, or should screen capture videos of different people navigating the site be shown? How should the biography of the work be presented? Many of these discussions were directed toward the old aesthetics of the site, then consequently moved into discussions on the conservation of *mouchette.org*. For example, features that were largely unknown in 1996 are widely used today, which makes many of the aesthetics seem outdated. Of them, the most obvious example is the entry page, which has early HTML checkboxes that are no longer used. Another example is the 'blog' like structure used in some of the projects. Whereas in 1996 the site would be referred to as a diary or personal website, today it is understood as a blog even though it is quite different from one. Nonetheless, will people thirty years from now understand the meaning of the word 'blog', or for that matter a 'personal website'? Similarly, some of the interactive elements on the website are antiquated and difficult to explain without becoming overly technical or historical.

Instead of incorporating the old artwork into SKOR, Neddham proposed that we focus on making a new work, which led to the creation of the Guerrilla Fanshop. The shop sold some objects that were part of old projects, but allowed for a distinctive appearance. Although online, the Guerrilla Fanshop could also be visited in the exhibition space of SKOR for a short time. SKOR's exhibition space was a small semi-attached house with its own entrance and large windows overlooking the street (Fig. 3.1). As I will explain in more depth in Chapter 6, *mouchette.org* is an internal circular website, which means that most of the movement is kept within the website. The exhibition space shared many of these characteristics, and became an interesting metaphor of the work. Similarly, the Guerrilla Fanshop was symbolic. On the one hand it reflected the desires of thirteen-year-old girls, on the other hand, in light of our discussions, Neddham believed that 'the preservation of a work of art becomes a new work of art'.¹²³ The suggestion to conserve *mouchette.org* by creating a 'new work' required Neddham to re-use and re-stage specific parts of the collection that consists of both on and offline artworks. In this way, an 'archive is never the "freezing" of something',¹²⁴ as she argued.¹²⁵

¹²² For more information see <http://www.skor.nl/eng/site/item/identity-works>.

¹²³ Personal conversation with Martine Neddham, Summer 2011.

¹²⁴ The notion of 'freezing' refers to conventional conservation theory where objects and materials are halted, 'frozen' in time, signifying a certain state of an object. For more information see, for example, Muñoz Viñas (2005:188-91) and Albano (1996:183).

¹²⁵ Personal conversation with Martine Neddham, Summer 2011.

Neddham's suggestions seem far removed from traditional conservation practices. As stated in the previous chapter, the theory and practice of conservation usually starts from questions of how culturally significant works can be conserved to their authentic state or as close as possible? Or, if needed, how can artefacts, like art, be restored to their authentic states by means of intervention? When considering the notion of variability, *mouchette.org* provides an interesting case to explore, because it is presented in various constellations and forms while maintaining many of its existing elements. In other words, in order for *mouchette.org* to 'survive FOREVER' as a mix of new and existing parts, it is necessary to find a way to conserve at least parts of the work for future creation. In this chapter I focus on the possibility of conserving *mouchette.org* by assessing if and how a net artwork can be conserved. I also take into consideration the specific knowledge that is needed to conserve artworks that continuously change. However, before explaining the conceptual ideas behind *mouchette.org*, I will briefly address the concept of authenticity in conservation. In particular, I consider the value and meaning of authenticity in light of variability.

3.1. Authenticity

The question of authenticity is a recurring topic and one of the key concepts in conservation theory. Nevertheless, the meaning of authenticity was not critically commented on for many decades. The concept of authenticity was first given importance in the Venice Charter of 1964, which stated in part that 'the common responsibility to safeguard [ancient monuments] for future generations is recognised. It is our duty to hand them on in the full richness of their authenticity' (ICOMOS 1965). However, the term itself was taken for granted. According to conservationist Herb Stovel (1995), most likely due to the homogenous group of discussants. Thirty years later, the International Council on Monuments and Sites (ICOMOS), together with the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) and the United Nations Educational, Scientific and Cultural Organisation (UNESCO), organised 'The Nara Conference on Authenticity' in Japan. Representatives from twenty-eight countries discussed the many complex issues associated with defining and assessing authenticity. The outcome was the *Nara Document on Authenticity* (Larsen 1995), which built on the Venice Charter. This time the concept stressed the particular importance and application of authenticity as it relates to cultural heritage, as well as how authenticity is rooted in specific cultural contexts and thus should be considered accordingly (Larsen 1995). Yet, over the years the exact meaning of authenticity has been contested and it is still subject to critical revision, reinvestment, and redirection. This makes authenticity a variable concept. As Lowenthal reminds us:

What counts as authentic shifted continually from substance to form to process and to images and ritual performance. Indeed, the very quest for authenticity altered its nature, just as

subatomic particles are affected by the act of observing them. Cultural relativity made authenticity a capricious will-o'-the-wisp, even a contradiction in terms (2008).¹²⁶

Taking advantage of this variability, in Chapter 6 I will argue for a new perspective on authenticity in relation to net art. However, returning to the present discussion, despite varying definitions, an object or building needs to meet 'certain conditions' of authenticity to be inscribed on the UNESCO World Heritage List.¹²⁷ In art conservation, authenticity is generally used to measure originality of materials and an artwork's completeness (Laurenson 2006). For museums, the quest for authenticity is important because it represents 'the real objects, the actual evidence, the true data as we should say, upon which in the last analysis the materialistic meta-narratives depend for their verification' (Pearce 1992:4). This means that measuring authenticity allows for a distinction between 'real' works and forgeries. Philosopher Nelson Goodman has been particularly influential in his attempts to clarify the difference between an original work and a forgery. I will return to his theories in relation to net artworks in more depth in Chapter 6, where I will identify and determine the value of authenticity in net art. My concern in this section is to focus on the conservation of net art guided by authenticity. The reference I use is the working definition adopted by many conservators, a definition put forward by Elizabeth Pye, Professor of Archaeological & Museum Conservation:

Authenticity has been generally considered to mean genuine in terms of materials, workmanship and date, and processes used to authenticate objects concentrated on the identification of raw materials, the examination of tool marks and other aspects of construction, and, where possible, the use of scientific dating techniques (2001:59).

In conservation theory this type of authenticity is also referred to as *nominal authenticity*, which defines empirical data, or 'the correct identification of the origins, authorship, or provenance of an object, ensuring, as the term implies, that an object of aesthetic experience is properly named' (Dutton 2003:259). Philosopher Dennis Dutton distinguishes *nominal authenticity* from *expressive authenticity*, because 'the concept of authenticity often connotes something else, having to do with an object's character as a true expression of an individual's or a society's values and beliefs' (2003:259). In this sense, authenticity is seen as a 'committed, personal expression' in which the artist (or performer) is faithful to his/her own artistic style and creative process, rather than to a historical tradition (Dutton 2003:267). Dutton compares this to the 'sensibility' and 'emergent value possessed by works of art' (2003:270). Whereas *nominal authenticity* enables an understanding of the practice and history of art through material analysis, *expressive authenticity* manifests itself through individual and/or collective values, beliefs and ideals. Dutton's *expressive authenticity* is difficult to identify, due to a lack of measurement and the limitations of interpretation. The term is now used interchangeably

¹²⁶ In Chapter 6.1 I will take advantage of this variability and explain how authenticity functions in net artworks by arguing for 'authentic alliances'.

¹²⁷ For more information see the *Operational Guidelines for the Implementation of the World Heritage Convention* (November 2011). The guidelines for authenticity are based on the *Nara Document on Authenticity* and can be read in section 79-86. Website <http://whc.unesco.org/archive/opguide11-en.pdf>.

with *conceptual authenticity*, a term that surfaced when conservators started dealing with modern artworks.¹²⁸

Authenticity has been approached and defined in multiple ways, particularly under the influence of less stable artworks and an increased understanding of technical artworks in the last two decades.¹²⁹ It could be argued that the ease and tolerance of replication, appropriation and versioning in the World Wide Web further complicates authenticity. Although artists have employed these strategies for many decades, the speed and accessibility of the network means that visuals, videos and sounds can be readily transferred and copied within seconds. Because of these changes, the concept of authenticity has been renegotiated. As early as the 1930s, literary and social critic and philosopher Walter Benjamin discussed the question of authenticity in relation to art produced by technical means. His article ‘The Work of Art in the Age of Mechanical Reproduction’ (1969[1936]) is still one of the most cited. There he asserts that reproducibility cannot be authentic because the ‘aura’ of the original work is lost. According to Benjamin, the manipulability or malleability of the photographic or phonographic copy diminishes what is at the crux of authenticity, ‘the authority of the object’. This is due to the loss of its presence in time and space (Benjamin 1969[1936]:521).¹³⁰ In Chapter 6, I will question this assumption by emphasising the processual in many net artworks. I will argue that reproduction, especially in the case of versioning, becomes a new work in its own right. For now, it suffices to say that net artworks are for the most part inherently variable and oftentimes multiple versions of the artwork exist. This does not equal reproduction; these are different versions, hence they can still be authentic. *mouchette.org* is exemplary in this sense. As I will show in the following, the work is rooted in specific art historical and technical contexts. The different projects act like an assemblage that evolves. Finally, the deliberately ambiguous wordplays and references influence authenticity in a way that questions both nominal (material) and expressive qualities (conceptual ideas).

3.2. *mouchette.org*

Mouchette.org is an interactive website created in 1996 by a pseudonymous character initially known as Mouchette. The project developed and evolved over the years. Additional pages were added and

¹²⁸ Jokilehto described conceptual authenticity as the total of ideas that an artist has about his work, or that which he means to convey through his work (1995:19). There is also a call for experiential authenticity (for example Ex 1993), which pays attention to the authentic experience of the audience. This is of course relevant, but I believe that conceptual authenticity (the ideas and intentions of the maker) already involves and includes experiential values. To add this additional form of authenticity would unnecessarily complicate matters, especially if conservators feel that they need to make a specific choice.

¹²⁹ For an elaborate account of the different ‘authenticities’ see Ex (1993). For more information about the challenges of authenticity see for example Pye (2001:57-76). A more critical note on the principle of authenticity is given by, among others, Cosgrove (1994) and Phillips (1997). More recently, Matyssek (2010) in her edited volume asks how to deal with contemporary art and the terms and logic of their preservation. The focus of the publication is on the importance of conservation and restoration procedures for our notion of ‘original’ and its stakeholders, which include artists and curators, conservators, insurance companies, lawyers or gallery.

¹³⁰ Benjamin’s issue regarding reproduction relates foremost to the production side and not (only) to the reception of art, which he argues has moved from the institution to the individual. Although this is true, several authors after Benjamin have, rightly so, stressed the positive potential of technology for democratic processes and production. See, among others, Nichols (1988). This debate was taken further by a group of Italian writers and theorists, following the Marxist concept of immaterial labor. Its most prominent authors are Maurizio Lazzarato, Paolo Virno and Antonio Negri.

other physical offline projects and events were organised. In 2010, after many years of well-kept secrecy, Martine Neddham revealed herself as the author behind the work. However, many people doubted her real identity since Neddham performed role-plays several times before. For example, when asked to present *mouchette.org* at an event, she asked other people to stand in as Mouchette (Dekker 2011a).¹³¹ Nevertheless, even today the visitor is welcomed on the home page by a large bright flower and a small stamp size photo in the upper left-hand corner showing a young girl looking down, presumably Mouchette (Fig. 3.2). Mouchette claims to be almost thirteen years old, an artist and living in Amsterdam. What initially appears to be the personal website, in English and French, of a female teenager evolves into darker themes in subsequent pages.

The name Mouchette derives from the novel *Nouvelle histoire de Mouchette* (1937) by French author Georges Bernanos, and the movie *Mouchette* (1967) by Robert Bresson, a free adaptation of the novel. In both accounts, Mouchette is a girl between childhood and adolescence. She leads a harsh life – rejected by society (family, school and friends). She is raped by a trusted older man, and also experiences the death of her mother. These events leave her disheartened, and although never made explicit, the story ends with her suicide. Bernanos claims that the story was inspired by his first-hand accounts of the atrocities of the Spanish Civil War while exiled in Majorca. Bresson wanted viewers to understand how humans negotiate their own redemption (Hudson 2009). *Mouchette.org* takes many of the themes that play out in the book and film and re-performs them in a contemporary setting, namely as an online diary with several project pages. Neddham uses some web characteristics in intricate ways to emphasise the drama and enigma of the story. For example, hyperlinks create confusing circulation; interactive possibilities produce several layers of information; and, identity play is performed in various ways. The latter is best visible in the wordplay of ‘mouchette’, the website’s domain name, the girl’s name, and the French word for ‘little fly’, but is differently shaped in subsequent projects. The equivocal use of these characteristics make it difficult to comprehend and identify important and less relevant aspects of the project. Moreover, the themes and concepts used in *mouchette.org* strengthen this sense of ambiguity. In the following I briefly explain how some of these conceptual characteristics take effect.

3.2.1. Darkness put into play

The website’s most prominent themes evolve around metaphors of violence and death, more specifically suicide.¹³² On the opening page, a large flower with several small drops of blood on its

¹³¹ In the early days of public access to the Internet there was a lot of play around identity formations. This historical framework already gives the first clues as to the dating of *mouchette.org*. For more information, see for example Turkle (1995) who studied the way people interact on so-called MUDs and role-playing games on the Internet; or Hershmann (1996) who assembled provocative voices of the Digital Age that grapple with the direction of digital technology and its concomitant issues, including virtual identities and the relationship to the physical self. Hershmann has been known for her identity artworks, from the early *The Dante Hotel* (1973-4) and *Roberta Breitmere* (1974-8) to *Agent Ruby* (2002) and *DiNA* (2004), her investigations and exploration of identity include performances, film, and net artworks. Such identity play was far less common in the 2000s where being online revolved around having a real-identity. This however is not to say that online identity is reliable. People often mask their identities (see Wiszniewski and Coyne 2002).

¹³² Computers are well-known metaphor machines. The interface is especially dominated by metaphors. Just think of the desktop, trash bin

petals accompanies the photo of Mouchette. An animated Gif¹³³ of a fly moving slowly in the center of the page, while two animated Gifs of ants move frantically to-and-fro at the edge of the screen.¹³⁴ This somewhat weird scene is enhanced by a female moaning softly, almost sexually. When clicking on the fly, the visitor enters a page where Mouchette points to a sentence with the meaning of her name. Another click on the fly opens a new page with a half-finished meal on a dinner plate. The image is abstract¹³⁵ and shows a hand pecking at the remains. Another hand becomes visible when scrolling down. This project can also be accessed by clicking on ‘dead fly’ in the drop-down menu on the home page. A grey square with the words ‘it’s me’ circles above the plate, accompanied by the sound of a buzzing fly. Clicking on the square proves rather difficult. It is either through determination or smart thinking that the button is ‘caught’. If successful, a black page opens. Green letters appear after a few seconds, as if typed live. They accuse the visitor of killing the fly when he/she pressed the button on the previous page. The fun of play on the previous page is turned into dark humour. The story continues when the fly – or the girl? – asks the visitor to tell her why she’s dead. An e-mail entry opens, and when clicked again (either by ignoring or sending a message), another page opens with *Lullaby for a Dead Fly*. The dark, almost melancholic, tonal music accompanies fragments of text that pass across the screen from all sides. The text consists of changing e-mails sent by people who have answered the question.

3.2.2. Identity play

As mentioned, over the years Neddham was invited to present the project at exhibitions and events, but instead of showing up herself she asked other people to impersonate Mouchette. In some instances a thirteen-year-old girl would present the project’s website; in others, a male in his thirties (Fig. 3.3). Neddham also used various objects in exhibitions, from videos to cheap and colourful soft toys, post cards and compact discs (Figs. 3.4 and 3.5). She also organised several events around the website; for example, a Last Birthday Party (14 December 2001) and the Guerrilla Fanshop (6 July – 26 August 2011). Neddham considers all of these outputs to be integral elements of *mouchette.org*. As such, Mouchette can be seen as an identity through which various projects are presented, or as Neddham calls

and file folders. But computer metaphors also affect the way the computer is experienced and conceived. This was for example the case with *mouchette.org* when the French police accused Neddham of providing suicide kits for children. She settled the accusation by removing the French version of the project (http://www.digitalarti.com/en/video/wj_spots1_42_martine_neddham_aka_mouchette). For further analyses on the use and influence of metaphors, see among others Weizenbaum (1976), Lakoff and Johnson (1980), and Chun (2011:55-95).

¹³³ Gif is short for Graphics Interchange Format, a standard for the storage and transmission of raster-based graphics information. The format supports up to 8 bits per pixel for each image, allowing a single image to reference its own palette of up to 256 different colours chosen from the 24-bit RGB colour space. It also supports animations and allows a separate palette of up to 256 colours for each frame. It was created in 1987 and widely used on the web because of its wide support and easy portability. For more information see: <http://www.w3.org/Graphics/GIF/spec-gif87.txt>.

¹³⁴ Similar to the flowers, the fly and ants are obvious references to phenomenological symbols used in art. In Western traditions ants are symbolic for arduous workers, humility, good organisers and regarded as having access to secrets. Flies on the other hand signify death, and therefore also symbols of the soul. For more information, see Werness (2006[2003]:8-10, 181-3), and Impelluso (2004) on the use of flowers in art.

¹³⁵ According to the page information, the image has been scaled from 357 x 340 (the original size) to 1280 x 1024, enforcing the pixelated abstraction of the image. This is also done with other images. For example ‘cat’ or the pornographic images make the action on the original images almost invisible. This way of abstracting images, if well used, is also a means to make people less recognisable in random images. A strategy that is for example used in Google Streetview.

it a 'brand' (Dekker 2011a). Use of the terms 'brand / branding' are interesting when reflecting them against the readings of sociologist Celia Lury, who argues that a brand is 'a platform for the patterning of activity, a mode of organising activities in time and space' (2004:1).¹³⁶ This means that a brand emerges in parts. Therefore, as she argues, it is an open system that extends into, or implicates, social relations. Furthermore, 'it is some-thing that is identifiable in its doing' (2004:1).¹³⁷ This notion of 'brand' affirms the construction of *mouchette.org* as an assemblage that varies over time and is composed of different parts and projects. The suggestion of an assemblage is reinforced by intricate navigation of the website, which changes with each visit. I will return to the consequence of such distributed assemblages in conservation in Chapter 5 and 6. For now, I should mention that the multiple projects both signify and give meaning to Neddams' Mouchette. Arguably, these characteristics are the website's greatest appeal, but also prove to be the most challenging elements for conservation of the project. What are the limits of such variability and to what extent does code and its infrastructures change?

These last questions relate to another challenge: the time-consuming technical maintenance of the website. According to Neddams, because of the ongoing software updates and changes to the internet, she spends several hours a day fixing bugs and making small changes to *mouchette.org*'s code.¹³⁸ Although this may be overstated, and would certainly not be the case for every net artwork, the question remains: What does this mean for the practice of conservation? How can such an involvement be implemented in existing workflows? More importantly for my current research, how much should a conservator know about a work? Knowledge is a necessary condition for authenticity. Various kinds of knowledge are involved in this case study, from material to art historical and of social behaviours. In other words, in *mouchette.org*, nominal and expressive authenticity go hand in hand, and at times influence each other. In the next section I will show how the latter takes effect and in the process answer the question: What knowledge and practical support is needed for a website to remain accessible?¹³⁹

To summarise, *mouchette.org* is heterogeneous and continually re-negotiates its own conceptual structures. The development and maintenance involve incompatibilities, constraints, rules, and a certain amount of improvisation. It poses several challenges for conservation. For instance, it consists of some old-fashioned material aesthetics; some of the outdated code and software can be difficult to read; maintenance can be very time consuming; participating users might change the work; and it evolves into other projects. It could be argued that these problems are not unique to

¹³⁶ Although the term 'brand' is mostly seen as a market modality and is used in economics, the way a brand mediates through organisation, co-ordination and integration of information closely connects to the way *mouchette.org* (and other net artworks) operate. Lury understands branding from the perspective of a 'culture of circulation', a process coined by Benjamin Lee and Edward LiPuma (2004). In Chapter 6 I will explore the usefulness of this term and its approaches in relation to net art.

¹³⁷ By emphasising the use of information to organise relations between products, Lury relies on Latour and Woolgar (1986) when stating that it is those relations that comprise the object of the brand (2004:3).

¹³⁸ Personal conversation with Martine Neddams, Summer 2011. For more information about her maintenance struggles see Neddams (2010).

¹³⁹ I asked Neddams what she has done over the years to keep *mouchette.org* alive, since she was so deeply involved in maintaining her website. As such my analyses of the artwork depends on the artist perspective. To counter this single narrative I also take into account presentations, exhibition history, and the reviews and articles that were written about the work to understand the importance of specific characteristics of the website.

mouchette.org, or net art for that matter, however the combination is rarely found in other artforms.¹⁴⁰ Moreover, the speed of developments, and consequently the depth and breadth of different knowledge fields, are major concerns. In the next section I will analyse the specifics of *mouchette.org* and compare these to an archaeological reconstruction of the media project *LoveLetters* by David Link. Here, I am interested in seeing what the aforementioned challenges imply in terms of software function, in the next section (3.4) I will explore the implications of audience participation in conservation.

3.3. (Re)constructing *mouchette.org*

The distinction between software and code is often blurred in common parlance, but understanding the difference between the terms often helps to identify authenticity. In general terms, software consists of the instructions that are entered into the memory of the computer, and is referred to as ‘soft’ because it is more malleable than the hardware (Petzold 2000). Software is the computer program that end users perceive and/or interact with, while code is what constructs that software; each software can consist of layers of code.¹⁴¹ Software and code are often hidden and not always directly visible. The hardware shields the programming and functionality beneath. Nevertheless, in most software the back-end code has a specific aesthetic that is easily recognised by those familiar with the programming language, and its ‘front-end’ aesthetics can also be discerned through historical comparison. However, arguably, software itself does not have a specific aesthetic. Software aesthetics are largely adopted from other media and conventions. For example, desktop files and documents are clearly metaphors for office environments. However, computer functionality does produce distinct aesthetics. For example, low-tech aesthetics which, as explained by Goriunova and Shulgin, reveal themselves through the limitations of the technology:

Bottlenecks, such as processor speed, screen resolution, color depth, or network bandwidth—4-bit, 8-bit music, 16-color pixelized visuals, slow rendering, compressed image and video with artifacts—create an authentic computer aesthetics, that is, the aesthetics of low-tech today (2008:113).¹⁴²

Similarly, computer (hardware) displays also certain aesthetics; such as the monitor, keyboard, wires, data storage, mouse, printers, graphic and sound cards, memory, motherboard, chips, etcetera. A combination of these aesthetics, both hard- and software, can be traced in *mouchette.org*, and

¹⁴⁰ Some of these challenges are also encountered in contemporary art like installation art, video art, or gaming. For more information, see Depocas et al. (2003) who argue for ‘variable artworks’; Van Saaze (2009) who describes how installation art influences traditional museum collection and conservation practices; the three-year research project *Inside Installations (2004-7)* <http://www.inside-installations.org> which provides practical and theoretical guidelines for the preservation and presentation of installation art; Winget (2008) who analyses the conservation of games; and in Richmond and Bracker (2009) who argue for an examination of the ‘principles, dilemmas and uncomfortable truths’ of contemporary conservation.

¹⁴¹ Another useful distinction can be made between code and data; code refers to the instructions of the programming language themselves, and data is the source material that the code manipulates (Petzold 2000), e.g. health or weather statistics.

¹⁴² Another example is Glitch art. A glitch originates from a technical error, which may be planned or the result of an accident. Although Glitch art is not confined to software, it has become a very prominent software aesthetic. For more information see, among others, Menkman (2011).

according to Neddham are elements she tries to preserve as much as possible to create a ‘witness’ of a specific time.¹⁴³

3.3.1. Front-end aesthetics

When opening the website *mouchette.org*, an immediate mid 1990s hard- and software aesthetic is recognised. The home page shows a close up of a flower covering two-thirds of the frame. The rest of the frame is tiled with the same image. The size of the larger image refers to the original width of a typical browser screen in 1996, with a resolution of 800 x 600 pixels (width x height). Similarly, the checkboxes next to the photo and the drop-down menu with the title ‘browse me’ at the bottom of the page signal the aesthetics of its language, HTML (HyperText Markup Language). In the early days of the web HTML elements formed the building blocks of websites. The extensive use of these old features in *mouchette.org* can be seen as a longing for the past, a technical fetish. But to Neddham, there is more to it. By holding on to the old aesthetics and functions, she wants to highlight a time when the user controlled things more easily.

As Neddham explains, the before-mentioned game of the ‘dead fly’ is a good example of how functions have changed and affected the behaviour of people. When she programmed the ‘dead fly’, visitors could resize the screen manually. It was not programmed to a fixed size, unlike some websites. Although the ‘it’s me’ button was extremely difficult to catch, as it was spinning around the screen, the screen could be resized to make a small cage to trap it. This resizing also affected the javascript programme, which slowed down the movement of the button. Nowadays, resizing happens automatically, and since some sites protect their layouts, people tend to forget, or ignore, that it is possible. According to Neddham, this has led to a loss of user freedom and interaction.¹⁴⁴ In a similar way, Neddham dramatised the limitations of long image loading times due to slow network connections. Short groans, howling dogs, and a sobbing female voice played on repeat until the image was loaded. These could be adjusted with faster loading times, but the limitation of slowness and the repeating sounds proved good methods to heighten the tension of the narrative.

These aesthetic references are important elements that reveal aspects of the author’s creative process and artistic intent. Neddham works within the constraints of a past that bears witness to earlier web aesthetics. She uses these early aesthetics to enforce this past. They also allow her to emphasise the theme of the website and its literary style. To put it more explicitly, just the idea that a thirteen year old made a bilingual and intricate website is already implausible. This narrative of misconception and false expectation runs through the website and is emphasised by hidden links and the deliberate (mis)use of tools. An example of the latter are the HTML check boxes that lack customary

¹⁴³ Personal conversation with Martine Neddham and Niek Reus, one of the programmers of *mouchette.org*, 14 August 2011, Amsterdam.

¹⁴⁴ Personal conversation with Martine Neddham, 14 August 2011, Amsterdam.

functionality. Firstly, they are already checked, not to mention mere static graphic elements with textlines that already direct to other pages. As argued by art historian Matthias Weiss,

[t]hese are all hints towards the literary possibilities of the net, of moving within fictional trails within the texture of the Internet, and of inventing a separate and different identity. However, the site transcends the application of these and leads to a reflection of the mechanisms of self-construction (2009:170).¹⁴⁵

Neddham is persistent in preserving the old aesthetics; however, this is not to say the website is static. On the contrary, *mouchette.org* is very dynamic, not only because external updates require the project to be adjusted, but visitors to the website also play an important role. They can comment on specific projects. They can also 'be' Mouchette by signing up to the Mouchette Network or by creating their own Mouchette page.¹⁴⁶ Seemingly, these interactive elements make it easy to take control of *mouchette.org*. This use of commenting on issues and questions raised by Mouchette establishes the interactive side of the website. However, none of these actions influence the back-end of the work. At first sight, the use of software seems limited to its functionality.

3.3.2. Back-end aesthetics

A functional use of software does not mean that software, or programming, can be easily emulated or migrated onto a new platform. For example, to make everything work properly after migration it would be easier, in theory, to rebuild *mouchette.org* in the current PHP5 environment rather than adjusting the code in its current language (PHP4). Rewriting is often easier than reworking existing software. Fixing out-dated versions takes a lot of time and most programmers are not interested in, or capable of, doing this. Although the logic might be the same, the language of a new version may be different from the older versions. This is not to say the aesthetics, or the work itself, changes.¹⁴⁷ Although they may, it foremost signals the existence of several parallel executions or reworkings of the artwork. Variation between versions are made in order to improve on or prolong the experience of the artwork.¹⁴⁸ Moreover, even the best programmers forget exactly how older systems work. This is

¹⁴⁵ Personal translation from German: Dies alles sind bereits Hinweise auf die literarischen Möglichkeiten des Netzes, sich im Gewebe des Internets in den Bahnen der Fiktionalen zu bewegen und sich im Spiel der Geschichten eine eigene, andere Identität zu erfinden. Nur übersteigt die Site die Anwendung derselben bis hin zur Reflexion über diese "Mechaniken" der Selbst-Konstruktion.

¹⁴⁶ It needs to be said that the level to which someone can become Mouchette, in other words the extent of Neddham's editorial influence, is not transparent. However, when asking about her editorial role she replied: 'I give a great importance to my role as editor. It comes very close to authorship, as if I wrote through other peoples' voices. I correct typos, I care for these texts. And although they remain under the name of their author (they get a mail to indicate publication), I feel they are under my artistic responsibility' (personal e-mail correspondence, 20 June 2014).

¹⁴⁷ As I will explain in more detail in Chapter 5, versioning is characteristic of art in general and in particular of electronic and digital culture, foremost because of the ease and speed of distributing information. To overcome the assumption that newer versions are better than older ones, Ippolito (2008) uses the word 'variant' instead of 'version'. It is also important to note the difference between different versions of a work and exhibition copies or editions. The latter do not necessarily change the work. In the case of photography, film or video, they are copies of the original master.

¹⁴⁸ The practice of versioning is also very common in literary circles. Bryant provides eight determinants of a version, of which the following are useful when taking (net) art into account: Versions entail some reconceptualisation or reimagining of the work in question. One version is always linked to another and therefore cannot be seen as a separate work. Next, versions are always the result of alteration, either by the author or readers. Or versions are culturally induced, or incidental, thus are not necessarily linked to authorisation. A version must also be defined by its degree of difference not similarity. A comparison of sequential versions will reveal its strategic pattern since versions are

not necessary a problem of memory. Even very simple programmes built two years ago might be difficult to fix, simply because the environment around it has changed.¹⁴⁹ It is not the memory of one detail, but the whole ecology of both hard- and software that needs to be taken into account, as one minor detail is linked to or dependent on another. This becomes clear in the following example.

As mentioned, Neddham is quite specific in her efforts to preserve the old software for as long as possible. However, instead of emulating or migrating old pieces to new software, she prefers to make the old ones function again by adding new patches to circumvent problems. For example, at the time they were made, some of the projects resulted from a specific idea, but the limitations in hardware formats prevented Neddham from realising her idea. Neddham states that she created ‘Lullaby for a fly’, including its soothing and repetitive music, with the idea that one day a person would take a computer to bed.¹⁵⁰ Although the possibility of taking computers to bed is very real now, Neddham’s feature runs on a specific version of Flash that does not function properly with current technology. Neddham thought of redoing the piece, emulating it. But, during the attempt, programming mistakes were made. The text would not run in the preferred order and eventually blocked the flow. Neddham accepted this at the time. And now, while considering the possibility of a new version, she is unsure whether to fix earlier mistakes or leave them as a record of earlier programming. As she explains:

I like that Mouchette’s back-end is a bit “dirty”. I like to compare programming to painting. Just as Mondriaan’s brushstrokes are very important, there is an authorial “hand” to a website. All the compressions for example are on purpose. This hand speaks directly to the emotion and shows the intention of the work. I strongly believe that there’s a programming style which relates to the goal you want to reach.¹⁵¹

It could be argued that Neddham, in this case, prefers the material (nominal qualities) to her conceptual ideas (expressive qualities). However, taking into account the kind of materiality that I described in the introduction (i.e. highlighting technical and social relations of network culture from which materiality emerges), the relation between nominal and expressive qualities is more complicated, which makes a stringent division incongruous. While Neddham could not execute her initial concept due to technical limitations, these restrictions had a primary influence on her work.

To return to the importance of programming styles, computer programmer Paul Graham (2004) takes the comparison between painting and programming one step further. While advocating for their similarities, he suggests that hacking and painting have the same creative process.¹⁵² They are both types of learning by doing, meaning that most paintings have a history of sketches and consist of

partly defined by their rhetorical impact on audiences. Lastly, versions are critical constructs by virtue of historical and editorial construction, thus their existence is always arguable (2002:88-90). Surprisingly the system of versioning is often not visible in art, even though this could explain a lot about the nature of the work. Such non-versioning stresses the homogenous state, but almost denounces the variability of a work. Ippolito (2008) argues for more attention for versioning in presentations, especially on wall labels at exhibitions. Kirschenbaum also stresses the importance of acknowledging versioning; because, for one, it exposes the cumulative labor that attends to a piece of software (2008:195-207).

¹⁴⁹ For more information about programmers’ ability to remember previous code or software, see, for instance, Ullman (2013[1997]).

¹⁵⁰ Private conversation with Martine Neddham, Amsterdam, 14 August 2011.

¹⁵¹ Ibid. It may not seem obvious to name Mondriaan in this respect, especially since his later work is so abstract. Nevertheless, even in those paintings, his ‘hand’ is extremely important. This is explained in detail in Van Bommel et al. (2012).

¹⁵² See also Montfort et al. (2013) who highlights the similarities between coding and movements like op-art and minimalism (2013:78-103).

different layers on a canvas. These layers slowly lead to the final painting, in which every detail has been carefully chosen. Painters also copy and learn from existing works. Similar to literature, versions of paintings develop by copying the methods and styles of earlier masters, not necessarily in an attempt to make faithful reproductions. The artist wants to improve a skill and bring the history of painting (or literature) to new levels. A similar strategy can be found in open source practices, where one studies the source code and learns to program.¹⁵³ In summary, a painting evolves through sketches, layers and experimentation. Such a dynamic process is also visible in coding. This demonstrates why it is important to read the back-end of net art, not only to be able to restore the code, but to also see why and how certain decisions were made. As in the case of *mouchette.org*, technical limitations serve a conceptual goal. To quote Graham: ‘Great software, [like painting], requires a fanatical devotion to beauty. If you look inside good software, you find that parts no one is ever supposed to see are beautiful too’ (2004:29).

Personal programming is also a topic among programmers. Some even claim to recognise someone else’s training. For example, the difference between computer science and biology is mentioned by one programmer as a distinction between the ways one might write computer code.¹⁵⁴ Without moving into detail, the importance of human and cultural factors in programming, and thus computing, is demonstrated by the condition of ‘Turing completeness’. Named after Alan Turing, ‘Turing completeness’ signifies that a universal Turing machine can simulate every other computing device. This means that a machine, which acts as a universal Turing machine, can, in principle, perform any calculation that any other programmable computer is capable of.¹⁵⁵ As artist/critic Florian Cramer points out, while machine functions might be interchangeable, ‘their different structures – semantic descriptors, grammar and style in which algorithms can be expressed – lend themselves not only to different problem sets, but also to different styles of thinking’ (2008:170). Similarly, media theorist Wendy Hui Kyong Chun shows that there are many myths around the dichotomy between the computer and its ‘all-powerful programmer who magically transforms words into things’ (2011:19).¹⁵⁶ She counters the belief that source code automatically does what it says. Such mystification of computing neglects the complexity of the execution. As she explains: ‘Code does not always or automatically does what it says, but it does so in a crafty, speculative manner in which meaning and action are both created’ (2011:24). This is to say that software is layered and shows itself most clearly in the execution of code. For instance, a programmer writes source code that consists of instructions in

¹⁵³ I will elaborate on open source strategies in Chapter 5.

¹⁵⁴ Private conversation with Jürgen Enge and Tabea Lurk at Netherlands Media Art Institute, Amsterdam (25 February 2011). See also Ullman (2013[1997]) who offers great insight into understanding software as culture by describing her work as a programmer.

¹⁵⁵ See Turing (1936). It needs to be noted that Turing completeness is often loosely attributed to physical machines or programming languages that would be universal if they had unlimited storage. Turing-complete machines are likely physically impossible because they would require unlimited storage.

¹⁵⁶ The gendering of computers and computing is interesting next to a whole body of work around the relation between the human and the machine. In this respect, Plant argues that ‘women have been the simulators, assemblers, and programmers of the digital machines’ (1997:37). Chun, in describing the role of women in relation to early day computing, concludes that women were important in that they (the women working on the 1946 ENIAC - the Electronic Numerical Integrator And Computer, the first functional electronic digital computer) helped shape the functionality of the computer. Still, there was a clear hierarchy present, where women were foremost coders and men programmers (2011:29-46).

a specific language (for example, the commonly used C or FORTRAN).¹⁵⁷ Computers can only execute instructions that are written in machine language (known as a low-level language). As such, compilers transform programmes by producing intermediary forms or object codes that are similar to machine language. It may be that only lines of code that are necessary during particular moments or for specific programmes may be executed (Chun 2011:24). Recalling Graham's words above, source code can reveal more than what is executed.

This situation was demonstrated when programmer Mark Hellar looked into the work *Agent Ruby* (1999-2002) by Lynn Hershmann and found a 3D model and code that resembled a text-to-speech programme. These were never used in *Agent Ruby*. As he describes: 'It looked like they had been trying to create a 3D model that would convert text from the artificial intelligence program into speech, but that never happened'.¹⁵⁸ This leads to the observation that not only are the writing styles not the same, but neither is the source code a mere repetition. Some things are left out when the code compiles. Thus the original source code may contain more information than what is seen after the compilation. In this case, the code could be said to contain contextual information about the technical constraints at the time, and possibly the artist's ambitions (in 2004, Lynn Hershmann used a text-into-speech system in her project DiNA).¹⁵⁹ It is important to understand source code as something ambiguous and not as generalised writing. As Chun also argues, when dealing with computer languages it is a myth to think that there are no misreadings or misunderstandings and only transparent information (2011:79). The extent to which code is ambiguous, and hence what can or cannot be altered, is crucial to the practice of conservation, particularly when con of the machine or a process in action, then how can a historically significant compiler, operating system or database be preserved?

To briefly summarise, so far I have emphasised the following points in identifying the relevancy of authenticity in software based art. Firstly, conceptual ideas are influenced by the restrictions of hard- and software, but these limitations can become driving forces. Secondly, the act of programming, programmers and the code are part of an artwork's style and aesthetics. Thirdly, code often contains contextual information that is not necessarily used, but can clarify as well as obscure meaning. I will explore the relevance of these points in more detail in the following by analysing a media archaeological reconstruction of the software based artwork *LoveLetters* by David Link, as compared to Neddham's endeavours. In the process analysing the limits of variability.

¹⁵⁷ These languages are more or less independent of a particular type of computer. They are also known as high-level languages because they are easy to read, write, and maintain (unlike machine-languages) and are therefore seen as closer to human languages. http://www.webopedia.com/TERM/H/high_level_language.html.

¹⁵⁸ Interview Mark Hellar, Smithsonian Institution Time-Based and Digital Art Working Group: Interview Project, 14 June 2013, http://www.si.edu/content/tbma/documents/transcripts/MarkHellar_130614.pdf. This information was taken into the technical narrative of the documentation model. At the time of writing these components were not critical for *Agent Ruby* to function.

¹⁵⁹ *DiNA* is an Artificially Intelligent character; capable of evaluating current news events on the Internet and relaying them immediately to users, and recognising users' names, questions and even voices. Ultimately she could change her mood to correspond with whether she liked a user or not. <http://www.lynnhershman.com>.

3.3.3. Reconstructing front- and back-end

Neddham explores the aesthetics of software and code in profound and intricate ways. With prominent moving GIFs, a mix of different language styles (from literary poetry and invented language to audience comments), the insistence of dealing with the limitations and technical aesthetics of early computing, and the use and misuse of interactivity, *mouchette.org* combines elements of art, linguistic, computational, and social cultures. *mouchette.org* reinforces their interdependence, pushing the aesthetic boundaries of art, while opening up societal taboos like incest, pornography and suicide. With a firm background in the arts, Neddham started as a novice in the web. She entered a new world without a clear model of how to make art in this environment. This attitude of working without a plan and building from scratch very much reflects the programming style of *mouchette.org*:

HTML code, in the beginning, was also something you could pick up and recycle, in a very humble, un-technical way, like *Facteur Cheval* picking up stones to build a palace. The knowledge came by doing. In the end the interface is totally custom made. (...) I resisted CMS because of the excessive standard functions, but for the website about *mouchette.org* I'm using a common CMS and it gives me a high sense of frustration, like being in a prison, having to use all kinds of predesigned boxes... I dream of having a software that lets me create by archiving. I am trying to find a programmer to compose an archival system within a spatial environment, an archival system that will suit Mouchette's needs and nothing else.¹⁶⁰

Can the attitudes reflected in the work be conserved? Over the years Neddham has continuously updated and maintained *mouchette.org* (Neddham 2010). The website's success shows that her preservation strategies are effective, but is it possible to rebuild software after decades have passed or an artist has died?

Although there are only a few examples of re-created works, David Link's rebuilding of *LoveLetters* shows that it is possible to reconstruct previously made software-based works. Link's approach fits the tradition of media archaeology, as explored by Huhtamo (1994), Zielinski (2006) and Parikka (2012), among others. However, Link's work should not be seen as a mere opportunity to reinforce or visualise written theory, but as a practice of media archaeology.

LoveLetters was programmed in 1952 on a Manchester Mark I by Christopher Strachey, a fellow Cambridge student and later a working colleague of Alan Turing's at Manchester University. The Manchester Mark I was one of the earliest electronic, programmable, and universal calculating machines. The machine used Williams tubes as means of volatile storage. Strachey's software used the Ferranti Mark I's built-in random generator to generate over 318 billion unique love letters (Link 2006) (Example 3.1).¹⁶¹ Although the letters are fun and show experimental characters that can be

¹⁶⁰ Ibid.

¹⁶¹ Why Strachey experimented first of all with love letters is unknown. Although it is speculated that they are parodies of normative expressions of desire, given he and Turing's then forbidden sexuality (Wardrip-Fruin 2011). They are also thought to be unbound from a sense of 'appropriateness'. These are 'fun' acts that offer insight into a history of curious and free exploration (Goriunova on the concept of the *Funware* exhibition, 2010). For more information on Alan Turing, see Hodges (1983).

DARLING JEWEL

MY LIKING ANXIOUSLY ADORS YOUR ADOUR. MY FELLOW FEELING
IMPATIENTLY LONGS FOR YOUR AMOROUS ENTUSIASME. YOU ARE MY BURNING
DEVOTION. MY SYMPATHETIC HUNGER. MY DEAR INFATUATION CLINGS TO YOUR
APPETITE.

YOURS AFFECTIONATE

MUC.

Example 3.1¹⁶²

traced in software programming,¹⁶³ it is in the process of working, in other words the context of the generator's processes, that makes the letters interesting and gives additional meaning to the data.¹⁶⁴ In 2009, David Link presented his reconstructed *LoveLetters_1.0. MUC=Resurrection. A Memorial* at ZKM in Karlsruhe. To build a functional replica of the Ferranti Mark I, Link worked from two archival photographs and several other documents found on the Internet and deciphered the software from Strachey's handwritten notes.¹⁶⁵ Link's installation was exhibited in 2010 at the Arnolfini in Bristol and MU in Eindhoven. The installation consisted of a Ferranti Mark I replica and some of the original working components were presented, like the old teleprinter, the original Williams tubes, Strachey's digitised notes and the projected love letters (Figs. 3.6, 3.7, 3.8). Visitors could use the Ferranti Mark I simply by following the instructions. By toggling switches on the reconstructed interface, the user could execute Strachey's software through its rewritten code. If someone managed to type his or her name in Baudot code on the computer's typewriter, the resultant love letter would carry their signature. The new letter was then projected at the entrance to the space or somewhere on the outside surface of the building. At the same time, the letter was recited through an old speakerphone placed outside of the exhibition space. Strachey's digitised notes were placed on two vertical LCD screens near the installation. These revealed his intricate ways of thinking. The visitor was given unique insight into Link's re-construction process by sifting through and deciphering this information.

This is not to say that reconstructing software is an easy undertaking. As Link confirms, it took many years of arduous work to reconstruct the details. Tracing the original equipment also turned out to be more difficult than expected. The hardware was often found by accident through university libraries or, in one instance, discovered in a dark corner of a farmer's barn.¹⁶⁶ Because some parts were extremely rare to find, it was necessary to emulate them. It can be argued that reconstructing then

¹⁶² The abbreviation MUC refers to Manchester University Computer.

¹⁶³ This type of fun is often seen in official or formal settings; i.e., the fun of exploring, trying things out and playing jokes on fellow developers. For more information see Goriunova (2014b).

¹⁶⁴ Wardrip-Fruin (2011) provides a detailed analysis of the generator processes of *LoveLetters* in relation to the meaning of the data.

¹⁶⁵ Strachey's notes and papers are preserved in the Special Collections and Western Manuscripts section of the Bodleian Library, Oxford University. The emulator can be found on Link's website at <http://alpha60.de/research/muc/>.

¹⁶⁶ Link recounts that one of the latest finds was an original switch board in a chicken farm, unused for many years but still in good shape (personal conversation, Bristol, September 2010).

re-executing the code was easier because the original paper notes could be accessed. This kind of material evidence is easier kept and read than code that is stored on obsolete hardware. However, as Kirschenbaum has shown, information (stored on a hard drive) leaves a trace that can be forensically reconstructed, ‘given sufficient resources—that is, elite technical and financial backing—data can be recovered from media even under the most extraordinary conditions’ (2008:xii).¹⁶⁷ Those trying to recreate gaming experiences make similar statements.¹⁶⁸ Next to reconstructing technical parts, specialised systems are devised to annotate and capture user data during the development process. This enables an ‘easy’ reconstruction of the code.

As Neddham also experienced throughout the years, the reconstruction or restoration of software is possible (Neddham 2010). Nevertheless, the success of a restoration depends very much on the programmer doing it. Whereas most programmers fix problems by replacing or rewriting code into new versions – something Neddham is not in favour of – only a few programmers take the trouble to work from the old code. For these programmers, software is not just a tool that can be adjusted, emulated or used to make work easier. For them, the fun is in the mental process of doing code that influences how they structure and think about information. As described by Niek Reus (one of Neddham’s programmers):

Before you start with the actual coding work, you visualise the results in your mind. In a sense it is close to playing chess. You try to figure out all the moves and the consequences before making the move. The actual work, the writing of code or programming, is merely typing in the final result. Sometimes a problem is technically visible, but more often there is a certain sensibility that you need to have in order to solve a specific problem.¹⁶⁹

3.3.4. Limits of variability

At the start of this chapter I said that *mouchette.org* is variable. Neddham pursues net specific characteristics of the work in both the front- and back-end, while *mouchette.org* changes and evolves in different constellations. Similar to a play or musical performance, net art is often seen as a live experience based on specific notation (Rinehart 2005, Groys 2013). Richard Rinehart (2005), director of the Samek Art Gallery at Bucknell University, made the explicit comparison between a musical score and software based arts as a way to gain a better understanding of media art forms, especially their creation, use and preservation. He places emphasis on the conceptual idea of the score/notation as a form that is fixed yet variable in its execution. Although the meaning and importance of ‘performance’, or performativity, deserves more attention than allowable here, I focus on Rinehart’s proposition and return to the issue of performativity in relation to net art in Chapter 6. Rinehart argues

¹⁶⁷ As yet, there is no research on what digital forensics could mean for software-based art conservation.

¹⁶⁸ See, among others, Dekker (2010:7.0), Winget (2008b), Benford and Giannachi (2011), and RePlay, an European research (2013-16) with a focus on the analysis, capture and modelling of the basic styles and techniques of play (<http://www.fp7-replay.eu>). Such documentation processes are also an important aspect of open source practice. I will mention some of the challenges that underlie these possibilities in Chapter 5.

¹⁶⁹ Personal conversation with Martine Neddham and Niek Reus, one of the programmers of *mouchette.org*, 14 August 2011 Amsterdam.

that media art follows a similar construction to music in which the essential concept and/or score is more important than the instruments or hardware that are used to perform or install a piece.¹⁷⁰ Similar to a score, code as a fixed entity is also variable in its execution.¹⁷¹ As such, according to him, the essence of code lies in its interpretation. In musicology, a similar difference exists between notation and the performance of the notation.¹⁷² This gap is recognised and acknowledged, making it possible to talk about instances of authenticity in works.¹⁷³ This means, as also outlined by Laurenson (2006), when analysing installation art, variation is possible without loss of authenticity.

Similarly, Ippolito (2008) has pointed out that media art (which includes net art) is inherently variable. Each time a work is presented it undergoes changes in personnel, equipment and scale. As such, he argues, adaptability and change are the means for media art to survive (2008:107). Although this is often the case with installation artworks that change their appearance and sometimes function according to the spaces where they are exhibited,¹⁷⁴ Ippolito rightly argues that the turnover in software is much faster and can happen in months or weeks. As mentioned in Chapter 2, together with Rinehart, Ippolito takes this a step further by stressing that media art is inherently variable. According to Ippolito: ‘variability is build into the medium and the artwork to some extent inherits that variability from its material substrata’.¹⁷⁵ What remains unclear is which material substrata they refer to and to what extent. But more importantly, they move away from the notion of a material (nominal) authenticity towards a conceptual (expressive) authenticity in which variability is accepted. The work is thus open to adaptation.¹⁷⁶

However, the comparison to musical notation falls short for software and code on two accounts: First of all, each time a file is accessed on a computer a new version is stored to memory. As Kirschenbaum explains,

One can, in a very literal sense, never access the “same” electronic file twice, since each and every access constitutes a distinct instance of the file that will be addressed and stored in a unique location in computer memory (Kirschenbaum 2013).

Thus, as argued by Kirschenbaum, ‘preservation is creation – and re-creation’ (2013). In other words, the distinction between creation and preservation collapses. The copy is seen as the result of a *process*

¹⁷⁰ Rinehart also used this metaphor to develop a documentation model. I will return to this model in the next chapter.

¹⁷¹ See also Yuill (2008) and Arns (2005). I will elaborate on the effects of these characteristics in Chapter 6.

¹⁷² It needs to be added that the degrees of permitted variability in music (especially in folk, hip hop and dub), theatre, and contemporary dance are generally wider than for art. As I will argue, variability, and moreover changes in net art are more common, and even inherent in its materiality.

¹⁷³ This is not to say that it accepted the difference between the written, the score and the performance. They are still contested. See among others Cook (1999).

¹⁷⁴ Noël de Tilly (2011) studied the life-cycle of installation artworks. Her starting point was the medium of production of these time-based works (single-channel videos, video installations, film installations, etc.), which made them more conducive to replication. Consequently, they could then be sold as editions, meaning that more than one institution or collector could acquire the ‘same’ artwork. By analysing the exhibition history of the works, she noticed how the identity of these works take shape over time and change with each public manifestation.

¹⁷⁵ Quote by Richard Rinehart at the symposium Software Art, POCOS (Glasgow, 11 October 2011), where he gave a presentation on a chapter of his new publication, co-authored with Jon Ippolito, *Re-Collection. New Media and Social Memory* (2014). His presentation can be viewed online: <http://vimeo.com/31440197>.

¹⁷⁶ The question remains: What would the guiding principles of conservation be? Ippolito suggests following the Variable Media Questionnaire (VMQ) to comprehend what he refers to as the ‘kernel’ of the work. I will analyse the implications of VMQ on conservation in more detail in the next chapter.

of copying (Levy 2000). In this case, the notion of variability may not be very helpful because it is questionable whether the copy is an instantiation of the original or if it is something new. Therefore, what is a copy in digital environments?¹⁷⁷ I will return to this question in Chapter 6. To keep with the narrative of this chapter I will reflect on the second point, which relates to the previous argument but considers the copy in relation to the *product* instead of process. How faithful is the copy to the original? In the case of *mouchette.org*, even though Neddham insists on keeping the ‘original’ code, additional code is written to enable the code to function properly. Although it could be argued as variable, in most cases the ‘original’ code will change. On a practical level, an element that no longer works because of browser settings could be made to work by adding a patch that translates the code into the new settings. This means that instead of being variable, the work is always in process. In other words, any transformation of the code gives it a different meaning.¹⁷⁸ By translating the code, the language changes as well as the acquired meaning. Furthermore, it follows that code attains meaning in relation to specific contexts; for instance, when combined with that which lies outside of the code, or as Matthew Fuller states,

[Software] gains its power as a social or cultural artefact and process by means of a better and better accommodation to behaviours and bodies which happen on its outside (2008:5).

It is in light of social and machinic rituals and relations that Link’s attempt is less successful. Although he restored the functionality of the work, the historical context, meaning and function of the love letters was lost on most visitors.¹⁷⁹ These could only be traced through written accounts, or in other cases, through video documentation. Furthermore, by disconnecting the various components, such as placing the typewriter on a pedestal covered by a protective glass case and shielding off the space around the Williams Tubes, a work that was once whole (defined as different elements that produce a result by working together) is now disconnected. The playful *LoveLetters_1.0* still functions, but by separating and shielding some objects, it is seemingly in a state of ‘freeze’. This type of presentation does not reveal the workings of computers. It could be argued that it fosters a mystification of computation.¹⁸⁰ As such, the material (nominal) authenticity of the machine is conserved at the expense of the conceptual (expressive) and experiential authenticity of the work. An emphasis on the physical object fits traditional conservation strategies, but shifts the focus away from setting up a system that could, for example, work with a wide variety of documents and operating systems. Such a strategy, as Ippolito also argues, would establish the rules necessary to evolve an

¹⁷⁷ For more information also see Levy (2000), who clearly describes the process of copy(ing) in different media.

¹⁷⁸ This process is perfectly exemplified by experiments on a single line of vintage computer code, the 10 PRINT, or the extremely concise BASIC program for the Commodore 64 (Montfort et al. 2013).

¹⁷⁹ This information was gathered through short questionnaires with visitors to the exhibition of the work at MU in Eindhoven. Personal conversation Angelique Spaninks, director MU, March 2011, Eindhoven.

¹⁸⁰ It is important to note that Link tried to re-create the social part of the installation. During the production talks he proposed to look for an original desk setting that could be used in the presentation. However, neither the budget, nor the exhibition setting allowed for these variations. A solution was found at MU in Eindhoven (2010) by creating a desk situation within the frame of the exhibition design. This did not reflect the original situation at all, but did give the sense of a working space. In this way, it captured the spirit of social interaction in the workplace without focusing attention on the antiquity of the objects, thereby overcoming a fetishisation of the installation. Although even here the typewriter was covered to prevent people from touching it.

ecosystem capable of withstanding unpredictable changes in technology. It is a future vision of self-evolving artifacts: ‘The organisms on the landscape—variations on word processors—might be interbred to produce new variations, and those judged best able to display various documents would pass their code onto the next generation of word processors’ (2011). However interesting this may be, a claim for the conceptual and the experiential over the material overlooks the importance of a media archaeological approach that tries to open up historical paths that are themselves easily overlooked. Certainly in art, stepping away from conventional examples as well as from the endorsement of consensus is an important step.

To briefly summarise, the notion of variability is more complicated when used with software based artworks than, say, analogue installation art. Although variability in the true sense of the word (i.e. instantiations based on the same score/code) might not be possible, digital documents contain remarkable amounts of historical information, through which saved metadata can be accessed. As concluded by Kirschenbaum, ‘computer operating systems are characterised less by their supposedly ephemeral nature than by the exquisite precision of their internal environments’ (2008:204). I will return to this seemingly paradoxical situation as being both ‘variable’ and ‘processual’ in Chapter 6, where I discuss the difference between ‘fixed’ versus ‘fluid’ and ‘performative’ versus ‘processual’. For the moment, it can be concluded that software is not necessarily a problem that cannot be overcome in conservation. As long as the susceptibility of specific code is comprehended, inclusive of software and the cultures around it, a website can survive for many years. However, it is important to note that the use of open standards increases the chances of survival. It is acknowledged that using open source software in artworks benefits conservation (a.o. Kirschenbaum et al. 2009, Dekker 2010). I will analyse the benefits and complications of open source practices in more detail in the coming chapters, more specifically in Chapter 5. Questions around the standardisation of software-based art in terms of conservation (for both open source as well as proprietary hard- and software) will likely be the greatest challenge in the (near) future.

A related challenge that is often overlooked within digital data collection systems is that they often ‘assume ideal circumstances and a homogeneous data set, not the messy world of proprietary and mutually incompatible formats one gets from an individual user’s hard drive’ (Kirschenbaum et al. 2009:110). Present strategies such as cloud computing or other third party back-up services will further complicate these matters. Another characteristic of many net artworks, and certainly of *mouchette.org*, is their processual nature. Websites change over time, sometimes as a result of technical changes (ranging from new browsers to screen size adjustments), and at other times visitor inputs. Whereas technical variations can be traced in code, it is up to a conservator to choose which version(s) to save (either by freezing, restoring or documenting) or which to work with (in the sense of keeping the website alive as a point of departure). At the same time, although visitor input can be

traced, user experience is much more difficult to capture.¹⁸¹ This could be one of the reasons that this kind of information is often neglected. In other words, there is often only content without context. In the next chapter, as part of an analysis of documentation methods, I will focus on ways to capture these kinds of experiences. In what follows, I briefly introduce the importance of users to the continuation, and possible conservation of *mouchette.org*.

3.4. Audience participation in and with conservation

For Neddham, *mouchette.org* is foremost a tool for communication: a social platform that branches into several directions. First of all, *mouchette.org* is a playful interface as Neddham explains, to express herself about issues that she as a non-native English-speaking person would find difficult to articulate (Dekker 2011a). Her online (anonymous) character also enables her to abandon intellectual authority while maintaining contact with visitors (Dekker 2011a). Similarly, in an attempt to provoke art discourses, Neddham uses ‘pink aesthetics’ to criticise institutional art worlds, which are enhanced by cheeky comments from an apparently well-educated thirteen-year old.¹⁸² However, her pink-style is also a drawback, as she explains:

Mouchette would never be called a political work of art, or even art that engages with the social. At best many art critics and curators see it as a funny little story, non-political and not socially engaged. This has annoyed me at times, because it is political and it does engage with the social on many levels. The idea of alternate identities is very political, as are the notions of multiple identities, and shared identities, which I provided through Mouchette (Dekker 2011a).

Secondly, *mouchette.org* as a social platform is a space where people can communicate with or help each other. And thirdly, it allows visitors to use the website for their own projects, or to build on or re-use in their own spaces. At a certain place in the website visitors are invited to enter Mouchette’s network (Fig. 3.9). They can obtain a password that enables them to act like Mouchette. With this password, texts and photographs can be uploaded to *mouchette.org*.¹⁸³ E-mails sent to Mouchette may also be answered by the new inlogee.¹⁸⁴ This community investment testifies to the project’s success, as several Mouchettes have been created over the years.¹⁸⁵ Moreover, the work was promoted by a close but dispersed community of followers (a fan club and simultaneously a hate club formed around the website). This could be one of the solutions for its future conservation.

¹⁸¹ See also n. 168; Jeroen van Mastrigt stresses the importance of experiential contextual information in (physical) game preservation (Dekker 2010:7.0). Henry Lowood describes ‘authentic experience’ as one of the ‘lures’ (or pitfalls) of historical software use (2013:10).

¹⁸² As recounted by Neddham: ‘I used to say: “Can you be pink and conceptual at the same time?” In the 1970s and 1980s artists from the *Art & Language* and conceptual art movements were very style driven, even though they pretended that appearance and personality were insignificant. But when look back, it was elegantly black and white, very stylish. Pink at that time, and even now in many cases, wouldn’t be acceptable. Pink is frivolous, not serious; it’s playful and certainly can’t be conceptual or political’ (Dekker 2011a). Some have argued that net art (or digital art) can be compared to conceptual art (most notably Shanken 2011). Although in some cases this may be relevant or true, I think this is not the case for *mouchette.org*. Neddham starts a machinic process in which she is very much involved during the whole process. There are many different concepts that she touches upon. Whereas conceptual art is often more narrow or defined, for example a notation is made by the artist and an execution by the public (and/or the artist) of a single concept.

¹⁸³ As mentioned (n. 141), Neddham maintains a strong editorial role.

¹⁸⁴ To see how it works, instructions are found at: <http://www.edit.mouchette.org/>

¹⁸⁵ I will return to the consequences of multiple and dispersed authorship in relation to authenticity in more detail in Chapter 6.

3.4.1. Networks of care

As already mentioned in Chapter 1, the term ‘network’ is used in different ways to characterise current social formations (especially within technological cultures). My intention in this chapter is not to focus on a theory of networks, but to indicate the potential of networks as collaborative practices that work towards the realisation of projects. As such, the networks I am referring to are closest to what media researchers Geert Lovink and Ned Rossiter have termed ‘orgnets’ (Lovink and Rossiter 2005; Lovink 2008:239-55). Orgnets are organised networks that should be seen in opposition to commercial social networking websites. These network formations are based on people who come together for a common purpose by building strong ties among dispersed individuals, thereby bringing goal-driven organisation to the Internet. The emphasis is placed on collective intelligence (Levy 1999[1994]), or the idea of a knowledge community (Jenkins 2006), in which everyone knows something, but no one knows everything.

However, I do not want to confine my use of the term networks to technology. And following researchers Yuk Hui and Harry Halpin (2013), who lean on philosopher Gilbert Simondon’s collective individuation (1989), I want to stress collectivity in networks. Such a point of departure helps to analyse the underlying structures of networks, by seeing the individual and the group not as opposing but as entities that influence each other and together constitute a constant process of individuation. As stressed by Hui and Halpin

Psychic individuation to Simondon is more a simple individualization, which is also the condition of individuation, while collective individualisation is the process that brings the individual into a state of constant transformation (...), each individual is at the same time both an agent and a milieu. (2013:111).

It goes beyond the aims of this research to elaborate on Simondon’s theories and their potential use to conservation. But I will elaborate on the effects of collectivity in networks in relation to net art conservation in more detail in Chapter 6. For the moment it is simply worth explicating the value of these networks and worth demonstrating that a community-driven conservation strategy is not unlikely. For instance, a situation presented itself on 23 July 2002. A few months after Neddham launched a quiz comparing characters from the film *Mouchette* with the website, Neddham received a summons from Bresson’s widow to take down any reference to the film.¹⁸⁶ Shortly afterwards, Neddham posted the letter on her website and through her e-mail lists. In response, several independent organisations took it upon themselves to mirror the project on other websites (Fig. 3.10).

¹⁸⁶ Bresson’s wife did not see the work as an adaptation, but as a contradiction to the film’s narrative. More surprising, the letter was addressed directly to Mouchette, believing she was a real person. By replacing the quiz (in its French version) with the letter, Bresson’s wife became part of the experience and the narrative of Mouchette, bringing it to life. For more information see Mackrous (2009) and <http://www.mouchette.org/film/>.

Similar initiatives are becoming more common. Instead of traditional institutions, a collection of individuals and small organisations gather to form foundations that look after an artist's legacy.¹⁸⁷ In such examples, a network of different people gather around an initiative and start working together. It is not uncommon for such networks to form around artworks that are not collected by museums, large institutes or private collectors: either to protect the work from censorship (as was the case with *mouchette.org*), or to safeguard and protect it, often after an artist dies. With different stakeholders and caretakers who do not have a centralised system or organisation to manage archival information, the relationship between conservation or documentation practices and knowledge transfer becomes inherently political. In her article, 'The Ethics and Politics of Documentation' (2012), Van Saaze examines how collaborative knowledge production takes shape in discussions about the continued existence of an artwork, and what role documentation plays in such a process. Analysing the documentation of Robert Smithson's land art project *Spiral Hill/Broken Circle* (1971–present) shows that several stakeholders became involved in the discussions around the project's preservation, but that reaching a solution was difficult 'partly due to the fact that the relevant information was distributed over a wide range of archives' (2012:81), complicating the decision-making process. Nevertheless, the most recent restoration (in 2012) was completed as a result of individual and collective efforts by a network of caretakers. Van Saaze concludes that

in the absence of a common heritage framework, the decision to keep this work for the future cannot be traced to one single moment in time; the history of the work shows that its prolongation had to be negotiated again and again (2012:82).

The distributed network of caretakers functioned through a combination of experts and non-specialists who brought in knowledge from different fields and backgrounds.¹⁸⁸ As acknowledged by Van Saaze, a thorough investigation of the different roles of the stakeholders, or more precisely caretakers, might provide a lot of insight into the political dimensions around the artwork, as well as in the art world at the time; moreover, I would add that analysing the underlying structures could show how sustainable such a network can be over time.

Similarly, with regard to *mouchette.org* users not only influence and assume ownership of the work, but they also take care of it – at least to a certain extent. The extent to which this happens will most likely shift in time and through different networks, because the process is ever evolving, like the work itself. Nevertheless, the formation of what I call 'networks of care' also adds to the importance of *mouchette.org*.¹⁸⁹ Besides reflecting on its own artificial conditions, it uses these conditions to set

¹⁸⁷ See, for example, the Nan Hoover Foundation, which was set up a few months after her death and is now dedicated to preserving her work as well as making it accessible to the public. See <http://www.nanhooverfoundation.com>.

¹⁸⁸ Van Saaze describes the network as consisting of 'temporary and active communities comprised of practitioners, academics and non-experts operating on different, though at times connected, levels: locally (municipal officials, contractors, land owners, cultural entrepreneurs) as well as nationally and internationally (artists, museum directors, curators, governmental officials, collectors, the estate)' (2012:82-3).

¹⁸⁹ By using the term 'care', or 'caretakers', I am referring to care as described by Annemarie Mol (2008) in her ethnography of health care. In this sense care as a practice involves political, economic and institutional power relations, but more importantly care is not a matter of making well-argued individual choices, it is something that grows out of collaborative and continuing attempts to attune knowledge and

unintended, emergent and distributed events in motion. These conditions add to the work's original ambition.¹⁹⁰

Although important questions remain – for example, how shifting constellations and power relations will affect future prolongation efforts of the artwork, or who will be leading or even responsible for safekeeping and tracking the documentation that is distributed across several caretakers – it is clear that these networks can operate without the structures of centralised archives and authorised custodians, which are present in most museums. For a 'network of care' to succeed outside of an institutional framework, or to become effective as a tool for transformation, it ideally has to consist of several characteristics. These can be traced by looking at how a network gives agency to individuals, instead of answering the question of how individuals create networks.¹⁹¹ A 'network of care' is based on a transdisciplinary attitude and a combination of professionals and non-experts who manage or work on a shared project. To enable the creation and administration of a project, the transmission of information is helped by a common mode of sharing where everyone in the group has access to all the documents or archives. Ideally, it would be an open system, or a dynamic set of tools that is used and cared for, where people could add, edit and manage information and track changes that are made. Such a system indicates and can also be monitored by the network. An added bonus is that if someone leaves, the project can continue because the content and information is always accessible and part of a larger network. Such a structure allows people to take control of a shared project, thus obtaining meaning from their 'investments'. To be able to share information and benefit from experience and insight gained elsewhere, for example, in other networks dealing with similar issues, a network should be dynamic such that individuals can easily move between networks and projects can be merged or split into separate smaller or more specialised groups.

Similarly, as mentioned, next to user contributions Neddham has also created several objects, performances and presentations that she considers part of *mouchette.org* (Dekker 2011a). When I asked her about the 'collection' of *mouchette.org*, she replied

It's hard to say what constitutes *mouchette.org*. Over the years I have lost track of all the performances, projects and objects that I made. But for sure, *mouchette.org* is more than just a website.¹⁹²

Although Neddham's lapse of memory could be questioned, it highlights that, for her, the concept of the work is the most important aspect of *mouchette.org*. Neddham stated:

technologies to diseased bodies and complex lives. Mol makes explicit what it is that motivates care: an intriguing combination of adaptability and perseverance.

¹⁹⁰ Such distribution and dispersion of events is not uncommon in net art and is often what it thrives on. Similar examples are Olia Lialina's *My Boyfriend Came Back From the War* (1996) and *Mission Eternity* by Etoy (thoroughly analysed by Bosma, 2011:173-83). They demonstrate a more recent way of dealing with memes and virals, in which the distributive effects are intentional if not foreseeable.

¹⁹¹ I am following the method proposed by Hui and Halpin (2013) who analysed online collective social networks like Facebook and made suggestions for alternatives that would allow people to work together towards common goals.

¹⁹² Personal conversation with Martine Neddham, August 2011 Amsterdam.

Mouchette was about creating a form. When I started Mouchette I wanted to use the notion of a character as something that transcends media, I saw the character as something that can be used as a form, or a container, this allowed me to gather and structure information. I have always believed that a character, a person or an identity is a good metaphor. They can assume the identity of an institution without actually existing. In this sense, I see characters as containers that carry units of meaning (Dekker 2011a).

Knowledge about Neddham's project is distributed across different (groups of) people, where each person knows something, but not everything. In other words, no single element contains the 'whole' story. Neddham uses relationships and situations as means to produce and distribute *mouchette.org*, as well as to illustrate her message.

This 'social life' of the project is important for conservators.¹⁹³ It is something that they will have to take into account and can benefit from. As Kathleen Fitzpatrick argues, a future preservation of digital objects may be less about

new *tools* than new *socially-organized systems*, systems that take advantage of the number of individuals and institutions facing the same challenges and seeking the same goals (...) Context is equally important, and equally volatile, in shaping our understanding of the production, circulation, and preservation of digital texts (2011:126).

A dispersed network of knowledge with a non-hierarchical structure places importance on localised knowledge, avoiding standardisation and ensuring variability rather than creating a freeze state. Whereas several networks around artworks or between organisations and museums already exist, and some of them such as Inside Installations, Matters in Media Art, Variable Media Network and INCCA are, or have been, very successful, none of them have explicitly recognised or framed their work as 'using' the potential of 'collective individuation'.¹⁹⁴ To briefly return to Simondon (1992), in collective individuation, relations to others, to self, and to technical ensembles, are knotted together through processes of individuation.¹⁹⁵ In other words, something becomes in relation; it 'emerges' from processes of becoming that are instantiated by differences.¹⁹⁶ This also means that something, a technology for example, is never final or complete – it is contingent, depending on variables such as personal backgrounds, intentions, competencies, or other contextual restrictions.

¹⁹³ I borrow the term 'social life' from Seely Brown and Duguid. In *The Social Life of Information* (2000), they argue for a stronger emphasis on the context of social networks around information. Information, they argue, only acquires meaning through social context. Similarly, Kirschenbaum advocates the importance of social dimensions in preservation of digital media, which is 'at least as important as purely technical considerations' (2008:240-1). Conservator Glenn Wharton (2011) examines professional authority and community involvement with a civic monument, which shows the benefits of involving public participation in conservation. Similarly, Laurensen and Van Saaze (2014) conclude with reference to the collection and conservation of performance art that the liveness or non-materiality of performance art is not the main challenge, rather what these works demand to maintain their memory; i.e. the maintenance of the networks which support the work (Laurensen and Van Saaze 2014:39). I will return to the consequences of such distributive methods in Chapter 5.

¹⁹⁴ I will return to the work of some of these different networks in more detail in Chapter 5.

¹⁹⁵ This also connects to my use of the notion of *alliances*, as mentioned in Chapter 6.

¹⁹⁶ As explained by Mackenzie, it is important to understand actors not as pre-constituted, but as becoming. The relationality is primary, and the entities are secondary in relation to the individuation that occurs (Mackenzie 2003:11).

3.5. Assembling *mouchette.org*

This chapter has shown that the resilience of net art is built and distributed through a complex and interrelated system of networks that present an assemblage of artistic, technological, political, and social relations which merge to form a variable entity.¹⁹⁷ Information is produced, presented and distributed differently. Such changes impact knowledge and power relations. A focus on variability, different types of authenticities and processes opens different paths and options. Guattari (2009[1966]) proposes a paradigm in which areas that were previously not concerned with aesthetic interests have proliferated into or exploited aesthetic modes of operation. These trajectories, following Guattari, can expose and reform traditional conservation strategies by exploring various paths. Consequently, a conservator should look for different strategies. Some elements of a work can be easily conserved, like posters, code, videos and music; other more ephemeral or performative elements can be documented. In conservation, multiple trails need to be followed, not single paths.¹⁹⁸ Inevitably, this raises the question of whether conservators (and it could be argued conservation practices as a whole) should shift their focus from conservation of materials to preservation of social information and relations. And if so, would s/he still be the right person to do this? Are we then still talking about conservation? Does conservation need to be re-thought? In the next chapter I explore these questions in more depth by analysing museum documentation methods and countering them with documentation strategies developed by artists.

As for *mouchette.org*, I have not been able to trace every element of the website, nor will a future conservator be able to do so. However, this might not be necessary. One scenario could be that a community takes control of *mouchette.org* and ensures its continuation through different versions. I will elaborate on this in Chapter 6. Some parts could be physically archived or digitally stored in archives and museums, others could linger and evolve between various networks. Some of it will be automatically cached through crawlers.¹⁹⁹ Stories could continue to be told through multiple authors and caretakers. Because Neddham does not want to control its growth, *mouchette.org* could keep generating more objects, events and comments. Together with communities that are growing around the website, *mouchette.org* is a circulation of stuff, experiences and sharing that started at some point and progresses without a definite plan.

¹⁹⁷ Goriunova (2011) describes such practices and processes that take place in 'Art Platforms' as organisational aesthetics. Although there are several similarities to be drawn, unlike *mouchette.org*, organisational aesthetics begin with a group of people and is not directed by one person (although it can be argued that in practice it is). Nevertheless, it may be interesting to see where these practices come together. I will pay more attention to such collective and collaborative processes in Chapter 5 and 6 in particular.

¹⁹⁸ This of course brings to mind Deleuze and Guattari's (2004[1988]) famous rhizomatic structure or Latour and Lowe's metaphor of the catchment area of a river – in which they use the word trajectory (2010).

¹⁹⁹ This new situation affirms the need to adjust the way an archive is set up. As I hinted at in the previous chapter, archiving is no longer about collecting and selecting, but structuring information. Notions of categorisation, metatagging and classification, as Bowker (2007) states, are withering. In order to keep track of data and information, they will become the prime subject for archiving in the coming years.

4. Documenting variability

As described in Chapter 2, the conservation of art has a long and diffuse history. Different attitudes towards fundamental questions have given rise to some notorious discussions. This has led to a set of questions that continue to plague conservators today. Should a work of art be presented as the artist originally intended or are changes allowed? To what level can changes be made and of what kind? Moreover, how are changes then recognised (Dykstra 1996, Muñoz Viñas 2005, Richmond and Bracker 2009)? To answer some of these questions and to come to a closer understanding of the meaning and function of an artwork, museums have developed decision-making models and documentation methods to guide the handling of artworks. In this chapter I focus on documentation as a conservation method to ensure future re-creation of artworks. More specifically I examine the consequences of such methods for net art.

One of the reasons why it is a vital practice in conservation to document a work and its evolving context is because people fall back on documentation when specific parts of artworks become obsolete or are only meant to exist for a short period (Depocas 2001). According to Getty Research Institute, ‘documentation is an essential element in conservation strategies. It is used to gather and record information, especially when establishing or providing evidence of facts or testimony’.²⁰⁰ Documentation in conservation practices is generally understood as the process of gathering and organising information about a work, including its condition, content, context, and the actions taken to preserve it, which I will explore in this chapter.²⁰¹ As explained in the introduction, documentation by artists also functions in other ways. It can provide information about the work. It can also be an aesthetic of the work, or even substitute the work in some cases. To answer whether, and in what way, documentation enables the (re)creation of net art, I analyse and compare documentation methods developed by artists with those used by museum conservators. This will indicate how artists’ documentation strategies can be of help in conservation decisions.

This chapter aims to chart the main consequences of documentation in conservation. To understand these consequences it is important to first comprehend the different roles and functions of documentation. Therefore, this chapter will start by briefly tracing the meaning of ‘documentation’. I am particularly interested in the way documentation is understood and how the motivations for distinguishing between different documents informs changing relationships within documentation practices. Finally, I propose a focus on documenting the process and experience of making net art. How can memories be kept alive while accepting the loss of parts of an artwork? As such, I argue that

²⁰⁰ Art and Architecture Thesaurus Online, The Getty Research Institute, http://www.getty.edu/vow/AATFullDisplay?find=documentation&logic=AND¬e=&english=N&prev_page=1&subjectid=300054638 (accessed 15 November 2009). The quest for the establishment of evidence of facts is especially important in conservation. Several reasons for this can be named; however, I elaborate on this issue in Chapter 6 because it is of lesser importance to this chapter.

²⁰¹ See, among others, Ferriani and Pugliese (2013); Inside Installations, <http://insideinstallations.org/>; Performing Documentation in the Conservation of Contemporary Art, <http://www.tate.org.uk/about/projects/neccar-network-conservation-contemporary-art-research>.

documenting net art requires a new understanding of conservation theory, which will influence current documentation methodologies.

4.1. From document to documentation

Documentation means different things in different contexts, and even in a single context it can take many different forms. For example, there are major differences in documentation for legal cases, scientific study, art collections and information science. In this chapter, I focus on the meaning and function of documentation in art conservation, leaning on the historical concept of ‘document’ as used in documentary studies (a.k.a. information science).²⁰² This perspective is particularly interesting because important steps were made that led to developments in communication and network technologies – now better known as the Internet.²⁰³

The term documentation originates from the word ‘document’, which derives from the Latin verb *docere*, meaning to learn, show, and inform, as well as *documentum* which signifies instruction and/or teaching (Webster’s 1913:441). Although we have lost this sense of *documentum*, the root of the word implies that the original meaning in Latin was not just an object, but rather a testimony, example, or instructive demonstration of a principle or idea. It was not until the Nineteenth century that the word document or documentation surfaced (Windfeld Lund 2003). The need to better define ‘document’ and consider what was to be included and excluded arose out of the growing quantity of documents, as well as increased internationalisation and standardisation processes in the late Nineteenth Century.²⁰⁴ In early Twentieth century Europe, a group of ‘documentalists’ from library studies made several attempts to broaden the concept of the ‘document’ to include objects outside of the library. Notably in this respect are the writings of Paul Otlet, *Traité de documentation* (1934), and Suzanne Briet, *Qu’est-ce que la documentation* (2006[1951]). Both argued for an expanded notion of the document that would include artifacts, natural objects, and works of art. In this way, documents were regarded as examples or groupings of things that derived meaning from their contexts (Buckland 1997).²⁰⁵

²⁰² For an extensive account on the background of the word ‘document’, see for example Buckland (1991 and 1997), Day (2001), and Francke (2005).

²⁰³ Vannevar Bush’s article ‘As We May Think’ (1945) is often regarded as the precursor to the Internet, more specifically hypertext (Smith 1991). However, these views ignore the work and ideas of the documentalists, among others. For a thorough account of historical predecessors see, for instance, Serres (1995).

²⁰⁴ The meaning of document has been of special concern to information scientists, since mechanical information systems operate on physical representations of ‘information’. See, among others, Day (2001) and Buckland (1997) who term this type of information ‘information-as-thing’ (1991).

²⁰⁵ It is important to note that the writings of the ‘documentalists’ of the first half of the Twentieth century came from a specific context, the era of industrial progress. In most of the writings, in particular by Otlet and Briet, documentation is characterised as an agent within a system of ‘science’ thereby, as Day (2001) argues, omitting ‘social processes of production through which “science” becomes the master signifier for both the logic of information production and for the product and value of information’ (2001:27). As such, they are reproducing an ideological order rather than critically examining one. In other words, they do little to critically distinguish ‘science’ from industrial progress. Moreover, it is ‘productive and exploitative of the dominant cultural tropes for science’ (Day 2001:30). This is not surprising, in itself. But it is important to realise that such a position often develops and constitutes standardisation, It also leaves little space for diversity and variability, where tropes metaphorically or metonymically ‘leverage society, forcing societies to develop according to “inevitable” technological models’ (Day 2001:11). By recognising the context in which these works came about, next to their historical influence on later developments, contemporary tropes can be more easily recognised and identified and as such acted upon.

The outspoken bibliographer and entrepreneur, Otlet, attempted to broaden the definition of a document from written records to objects of any kind. As librarian and information scientist Michael K. Buckland summarises:

Graphic and written records are representations of ideas or of objects, [Otlet] wrote, but the objects themselves can be regarded as “documents” if you are informed by observation of them. As examples of such “documents” Otlet cites natural objects, artifacts, objects bearing traces of human activity (such as archaeological finds), explanatory models, educational games, and works of art (1997).²⁰⁶

Otlet emphasised the social function of documentation as a way to gain knowledge and prepare a better world, or as Ronald E. Day notes, to project humanity into a universal and global future (2001:10). In this sense, he insisted on the importance of the ‘Book of universal science’ as a means to capture everything that was written down:

All books, all items, all the memories, all communications, all published information, are in substance as chapters, sections, subsections, paragraphs simple one and great book, the Book of universal Science.²⁰⁷

Otlet’s tendency for overstatement and vast generalisation (Day 2010:12) also led to plans of developing a new system of research that would assist science and bring world peace. The proposal even transformed into plans to build the *Cité Mondiale* which he envisioned as a collaboration with several architects, including Hendrik Christian Andersen and Le Corbusier (Levie 2006). Despite his utopian views, Otlet is important as a visionary. His ideas connect technological development with social progress. I will first position his work against that of Briet before showing their relevance to today’s practice.

Briet was more straightforward in her writing and her ideas were less utopian than Otlet’s. By 1924, she was one of the first women to work as a professional librarian at the National Library in France. More than Otlet, Briet focused on the nature of the document, breaking the trope of the book (traditionally seen as the embodiment of proof) for documentation. Briet leaned on work by linguists and philosophers to expand the notion of a document to include, in particular,

any concrete or symbolic indexical sign [indice], preserved or recorded toward the ends of representing, of reconstituting, or of proving a physical and intellectual phenomenon (Briet 2006[1951]:10).

Although she recognised the abstractness and hence the possible inaccessibility of this definition, by referring to the word ‘indexical/indice’ she placed the document in an organised and meaningful

²⁰⁶ Boyd Rayward translated and edited many of Otlet’s writings. He also brought them together in one book. On documentation, see, for example, Boyd Rayward (1990:71-86, 105, 176-203).

²⁰⁷ This quote by Otlet is taken from Vanpée (2012:8) and is a personal translation from French: Tous les livres, tous les articles, tous les mémoires, toutes les communications, toutes les informations publiées, ne sont en substance que des chapitres, des sections, des paragraphes, de simples alinéas d’un seul et immense livre, le Livre de la Science universelle.

relation with other material, ultimately granting objects documentary status.²⁰⁸ Moreover, rather than emphasising documents as essential ‘facts’ or ‘proof’ she stressed the referential value of documents. Documents only become proof or facts in relation to other material. Thus, documents are examples of things, or grouping of things, which derive meaning from their context. In this sense, Briet stresses the kind of materiality as later described and expanded by Hayles (2002), and which I pursue in this research. This relates to the concerns of many contemporary art conservators, who emphasised, more than Briet, the social construction of meaning.²⁰⁹ The question of what constitutes a document is still a subject of discussion, which I will elaborate on in more detail in Chapter 6. For now it suffices to say that especially in the conservation of installation art, it has become more acceptable to preserve information (content and context) next to the carrier.²¹⁰

Not everything becomes a document automatically. For Briet, something only becomes a document when it is brought into public knowledge. It should unfold into social and cultural spaces (Briet 2006[1951]:10).²¹¹ A stone, for example, or Briet’s famous example of the antelope, only becomes a document once it is separated and catalogued, and made known to the rest of the world through articles, etcetera. After which, it can be put on display and studied as a primary document. Briet also made a distinction between primary and secondary documents.²¹² The primary document is the original document. The secondary document is created from the primary document.

The proper job of documentation agencies is to produce secondary documents, deriving from those initial documents that these agencies do not ordinarily create, but which they sometimes preserve (Briet 2006[1951]:25).

The comparison between the documentalist and the conservator is interesting. Both adhere to a hierarchy in documents: the primary document equals the artwork, or the object that is kept in the collection archive, and the secondary document is the information about the artwork held in the documentation archive (Dekker 2010).²¹³ In the following I briefly elaborate on the changing meaning of document, and consequently its practice, under the influence of technology.

²⁰⁸ The notion of object as sign is of course reminiscent of semiotics as developed by Roland Barthes, for example, in his book *The Semiotic Challenge* (1994[1988]). There he describes the object as a vehicle of meaning and as a communicator of information.

²⁰⁹ See, for example, the writing practices which was discussed in the previous chapter, i.e. Caple 2000, Clavir 2002, Muñoz Viñas 2005. The same goes for information studies, in which the term ‘relevance’ is used as a central concept. This is generally considered to be situational and ascribed to by the viewer (Buckland 1997). Windfeld Lund, for example, has taken Briet’s notion a step further by emphasising the activity involved in creating a document so that the activity itself becomes a document, regardless of whether the result is a tangible object or not. For instance, dance performance or a game of chess (Windfeld Lund 2003).

²¹⁰ See, for example, the outcomes of international research initiatives like *Inside Installations* or *Matters in Media Art*. These examples will be further explained in the coming paragraphs.

²¹¹ Interestingly, Ronald Day (2008) notes the rhetorical similarity with Latour’s ANT, fifty years later, especially in his article about libraries (Latour 1996b).

²¹² The distinction between primary and secondary documents or sources is a common practice in the field of information science but also in other areas of research, for example in historiography and journalism. In most cases, the difference between a primary and secondary document is determined by how the documents are originally created and in what ways they are used. The discussion between primary and secondary documents is important because it involves the notion of trust, which is and has been an important factor in determining the validity of results in research practices. An interesting case in this sense is the working of the open online encyclopaedia Wikipedia. For more information, see Dekker (2009:85-92) and *Wikipedia and the Politics of Open Knowledge* conference organised by Institute of Network Cultures, <http://networkcultures.org/cpov/>.

²¹³ Comments, or annotations, in code are also referred to as ‘secondary notation’, in reference to the more privileged primary notation of the machine. For more information about the use, benefits and challenges of graphical secondary notation see Petre (1995).

4.1.1. The influence of technology on documentation

Otlet is best remembered for his interest in solutions for the quantitative problem of information overload. His well-known *Monographic Principle* was a systematisation process, which was later developed into his Universal Decimal Classification System (UDC), a library system that is still in use in many academic libraries in Europe (Hahn and Buckland 1998).²¹⁴ Otlet suggested that information in social science bibliographies could be categorised into four elements: facts, interpretation of facts, statistics, and sources (Otlet 1990:16). The systematic recording of facts, statistical data and the interpretation of them in final analysis was made easier by ‘creation of a kind of artificial brain by means of cards containing actual information or simply notes or references’ (Otlet 1990:17). The cards allowed single and separate pieces of information – from bibliographical to more substantive data – to be recorded. This is known in hypertext as nodes or chunks of text. Separate sheets were used to record larger parts of information (Hahn and Buckland 1998:68). As such, the documentalists understood documentation as part of the ‘historical development of global organisation in modernity (...) not simply a bibliographical technique but as a cultural technique’ (Day 2001:7-8).

Otlet and Briet emphasise the technical retrieval of information and the global organisation and transmission of this information, which they tied to social systems. As Day notes:

For documentation, the technical retrieval of materials was deeply tied to the social and institutional use and goals for documentary materials. In contrast to the functions of libraries and librarians, which defined themselves in terms of the historical collection and preservation of books, documentalists emphasised the utilitarian integration of technology and technique toward specific social goals (2001:7).

They saw a need for standardisation, efficiency and for the interoperability that was a precondition for effective collaboration and dissemination of knowledge. As such documentation was

not limited to recording information but will allow its automatic retrieval at any moment it is required; [documentation is] a vast intellectual mechanism designed to capture and condense fragmentary and scattered information and to disseminate it wherever it is needed.²¹⁵

Seen from this perspective, Otlet and Briet also envisioned changes in the profession of the librarian as well as the function of such an institution. More clearly than Otlet, Briet made a distinction between the librarian and the documentalist, the former being the one who looked after the collection and developed bibliographic apparatus and the latter the assistant of scientists focused on the advancement

²¹⁴ The monographic principle and the decimal classification system allowed Paul Otlet to manage a vast amount of data and run a knowledge information centre in the Palais du Monde or Mundaneum. It goes beyond the aim of this research to elaborate on the importance of Otlet in information science. But it is interesting to note that with the discussions around hypertext that started in the early 1990s, and more recently relating to the semantic web and the social web, a renewed interest in Otlet is visible. See, for example, the numerous writing about Otlet by, among others, Boyd Rayward (1991 and <http://people.lis.illinois.edu/~wrayward/otlet/otletpage.htm>, Buckland (1991) and Wright (2007 and 2008).

²¹⁵ Otlet quoted in Van de Heuvel and Boyd Rayward (2011:4).

of intellectual works by the groups they served (Briet 2006[1951]:12-3, 20-34). Briet saw the documentalist as paired with the researcher (Briet 2006[1951]:28, 51):

It is not too much to speak of a new *humanism* in this regard. A different breed of researchers “is in the making”. It springs from the reconciliation of the machine and the mind (Briet 2006[1951]:17).

She continued to stress the influence of technology that facilitated new conditions of research. This led to the birth of ‘Homo documentator’ (Briet 2006[1951]:20). Exciting and expansive possibilities and developments are visible in the methods of different documentalists that view technology as a way to bring change.²¹⁶ However, of interest to Briet, and to a lesser degree Otlet, was the importance and influence of social networks and cultural forms that give value to documents (Briet 2006[1951]:vii).²¹⁷ This changing discourse has also been slowly adopted in the field of conservation. As shown in Chapter 2, a conservator is no longer ‘the king in his own territory’, but works together with other specialists, sometimes forming one team.²¹⁸

4.1.2. Document in context

To briefly summarise, Otlet, Briet and other documentalists increasingly emphasised contextuality through their evolving notion of the ‘document’. Such a change in emphasise can also be witnessed in some practices that present and preserve digital art. For example, Ippolito (2008) argued for the inclusion of all kinds of contextual information on the exhibition’s wall labels to express the variation or multiple versions that are common in digital artworks. He gave the example of the evolving work *Apartment* (2001) by Marek Walczak and Martin Wattenberg, who very clearly marked each new version. For example:

Apartment v0.1 (mw2mw.com, Fall 2000) A variant that took in words and created a floor plan using a map-of-the-market style layout [a rectangle filled with grids of proportional size].

²¹⁶ The insistence on and strong belief in progress and technology was in part a lingering effect of the Enlightenment, the social agenda of Darwinism and also a natural consequence of economic growth and technological development. See, among others, Buckland (2008). The beliefs can also be traced in our present-day lives: from knowledge management and ontologies to the possibilities of social networks, hypertext and semantic web structures. See, for example, Wright (2008).

²¹⁷ However, Otlet is credited for this issue in most reviews and articles. This is most likely due to his regularly published ideas around the Mundaneum and his thoughts on linking information or what now would be called hyperlinks. According to Otlet, links carried meaning by, for example, annotating if particular documents agreed or disagreed with each other. That facility is still lacking in the logic of modern hyperlinks. Furthermore, his vision of the Mundaneum aspired not just to draw static links between documents, but also to map out conceptual relationships between facts and ideas. Although he saw the potential of a social network as a disseminating force, or as way to work together on collecting and organising documents, he was very much in favour of a top-down approach (Wright 2008). For more about the influence of Otlet as precursor of the Internet, see Day (2008) or Levie (2006) and her documentary about Otlet: *The Man Who Wanted to Classify the World* (2002).

²¹⁸ According to Garrett Verhoeven, head of conservation Special Collections of the University Library, University of Amsterdam (Funnekotter 2010), in library science and practice the conservator has not been ‘the king’ for many years, unlike conservation of art where developments have been much slower. Hill Stoner (2005), for example, remarks that the task of the Twenty First century conservator is to collaborate with scientists and others (see also Chapter 1). As well, SFMOMA is one of the only museums to realise a Team Media: a group of people from different areas of expertise who together decide on best practices (see also n. 121).

Apartment v1.1 (turbulence.org, 12 February 2001) Apartment opens. We choose 9 “seed” apartments to place in the city. Maybe after a few apartments are inserted, we can take these out.²¹⁹

They identified the place, date and any changes that were made before the new version was released. Ippolito emphasised that such elaborations are necessary, because

mutations in code and appearance are a necessary consequence of adapting to the new media landscape (...) new media artists and technicians are used to this ferocious pace of media turnover, but unfortunately, the curators and archivists charged with capturing an artwork’s vital statistics are not (Ippolito 2008:115).

Elaborate ‘signs on the wall’ educate and inform what has happened with the work. In other words, the work is acknowledged as part of a specific context. This begs the question: If an artwork is part of a longer legacy of other works, is it then still possible to talk about the primary or original document/object after the document/object ceases to exist? I will come back to this question in Chapter 6. For now, it suffices to say that by not referring to previous (or other) states, an artwork is regarded as a single object, thus affirming its stability instead of its variability.²²⁰

The fixation on the single object obscures the fact that many net artworks are constituted through convergent networks of media platforms and social communities. These works always derive meaning from the context.²²¹ It follows that documents are also interpreted differently depending on the person and location, which signifies the variability of interpretation of documents. Moreover, that closure is never stable and shifts according to time and context (Szmelter 2012). The intertwining of context and content can lead to situations where the distinctions between primary and secondary documents collapse – as was the case, for example, with JODI’s *Jet Set Willy FOREVER*, where the documentation became the work. Could it be helpful to analyse the creative process of net art to better understand the distinction between the two – while questioning whether it is still relevant? First steps in this direction have been made by researcher in transmedia, Marc Ruppel (2009), for instance, who focuses on the preservation of (hyper)narratives arguing that methods are premised on ‘mono-media sensibilities’ rather than ‘cross-sited works’. Writer and researcher Corina MacDonald (2009) emphasises the importance of secondary documents when handling variable media artworks. The museum world has not convincingly followed.²²² Ruppel acknowledges that one of the difficulties for a redirection of attention is the loss of boundaries at the sites that traditionally help determine the act of conservation. For example, the degradation of a material can be predicted to a certain degree when

²¹⁹ See Ippolito (2008:127-30) and <http://www.turbulence.org/Works/apartment/#>.

²²⁰ See also Van Saaze (2009) about the different versions of Nam June Paik’s *One Candle* and the way museums deal with these ‘different’ works. It could be argued that the notification of editioned artworks are the exception. Although this expresses the status of the work, such a distinction does not say anything about other versions of the work.

²²¹ The working of convergence is analysed more in literature studies, where ‘transmediality’ (Jenkins 2007), ‘cross-site narratives’ (Ruppel 2009) or ‘technotext’ (Hayles 2002) are used to describe these processes.

²²² An approach to conservation that follows the methods of the creative process within these works has also been suggested by media art artists and small organisations that deal with born digital material processes (Dekker 2010). There are some exceptions where documentation practices are gaining in importance, see n. 209.

a single material is used. As with Ruppel's example of hypertext narratives, net art is dispersed, which is seen as inherently valuable to the work. It functions across media, platforms and (online and offline) spaces that all have their own narratives and contexts. They erode the familiar and accepted borders of recognition (Ruppel 2009:285). I will return to the issue of distributed artworks in Chapter 5, and 6 in particular. For now, to stick with the subject of documentation, it is necessary to know what can, or cannot be documented, how documentation is used, and consequently what the function is of documentation. In other words, what are the methods and means of documentation and how are they employed? I will analyse these 'practices of documentation' by looking at Blast Theory's working practice. First, I describe their documentation methods. Second, I analyse several existing documentation models by museums. And third, I compare these different strategies before concluding what a best practice for net art should be.

4.2. Blast Theory

Blast Theory is an artists group that uses interactive media to create new forms of performance and interactive art that mixes audiences on the Internet, at live performances and through digital broadcasting. Matt Adams, Ju Row Farr and Nick Tandavanitj lead the UK based artist group. Dating back to the early 1990s, they explore and question the influence of technology on social, cultural and political facets. Blast Theory confronts a media saturated world using performance, installation, video, mobile and online technologies to ask questions about the ideologies present in the information that envelops us. Their interactive art and research focused projects have been created for gallery, street and television spaces. In particular, their most recent work has centered on conceiving of new uses for location aware technologies in public spaces by creating non-commercial content through means of already present technologies. Blast Theory's interest and use of technology, and the innovative possibilities that arise, do not stem from a desire to create flashy games with the most developed tech for the most techno-savvy. The use of technologies in the conception of their work has grown from thinking about technology as an ideology to a cultural space (in its own right), constraint, and communication that is both a medium and a platform. These are fundamental elements of the way people are and how they talk to each another.²²³

From the outset of their practice as an artist group in the early 1990s, Blast Theory has created a diverse number of artistic projects. Their work has focused on creating experiences for the public using a whole range of technologies, from GPS systems to mobile phones and online platforms, among others. Blast Theory has worked with a large number of collaborators from different fields and sectors. A survey of their work offers a number of possible case studies to examine documentation strategies. For the purposes of this research, I selected their work *Uncle Roy All Around You* which premiered in London at the Institute of Contemporary Arts in 2003. I choose *Uncle Roy All Around*

²²³ For more information see, <http://www.blasttheory.co.uk/>.

You because the development of the work involved a number of different collaborators from various fields. It was heavily documented, because it was part of a well-funded project.²²⁴ Also, its conceptual development spanned from previous Blast Theory works, and fed into the conceptualisation of future projects. This project is also far enough in the past to allow for some clarity of its development, but not so far that all nuances of its creation are lost. While I selected this project to offer a more detailed analysis, it should still be taken as a general exploration of their working process. The way in which projects are conceived and developed is largely contingent on the specific project at hand. *Uncle Roy All Around You* is used here to offer specific examples to give weight to discussions on Blast Theory's documentation strategies.

Uncle Roy All Around You is a mixed reality game (a game that allows players to experience various realities simultaneously). The game is played on actual city streets and in a virtual city online (Fig. 4.1).²²⁵ The online environment is an exact replica of the actual city space (Fig. 4.2). The mission of the game is to find 'Uncle Roy', the main character of the game (Fig. 4.3). Players online and in the street work together to find him. Using handheld computers, the street players are sent on a quest around the city. They are offered directions by Uncle Roy via the devices (Fig. 4.4). At the start, the street players announce their location. An avatar of them is revealed in the virtual world in the same geographical location. Here, online players can send private messages to street players to help them find Uncle Roy. Street players can choose whether or not to send back audio messages in response. At the end of the game, after they have been led to various locations, online and street players are asked a series of questions regarding trusting strangers and whether or not they would make a commitment to each other. If they agree, the project makes a match and offers them the opportunity to meet face-to-face.²²⁶

4.2.1. Methodology and documentation strategies

Blast Theory has rather extensive and meticulous documentation that captures the process of creation and presentation of their work. As Matt Adams, one of its founding members, states, 'those bits of documentation have to do multiple jobs for us – they are marketing things, explanatory tools, and appendices to the research, they act as records'.²²⁷ As such, documentation exists beyond the time of the work and testifies to the company's creative process and practice. By considering documentation as both testimony and a decision making tool, I follow the assumption that what is documented and

²²⁴ Matt Adams, interview Brighton, 5 February 2010.

²²⁵ See Benford and Giannachi (2011), among others, for an explanation of 'mixed reality performance' in Blast Theory's practices.

²²⁶ *Uncle Roy All Around You* is a collaboration between Blast Theory and the Mixed Reality Lab (MRL) at the University of Nottingham. Blast Theory's interest and use of technology has been greatly influenced by working closely with the MRL, whose body of research rests largely on the exploration of technologies. Although this collaboration still stands, when *Uncle Roy* was created, there was a stronger relationship with the MRL regarding creative ideas. *Uncle Roy* was also created with support from British Telecom, the Arts & Humanities Research Board Innovation Award, the Equator funding project, and the Interdisciplinary Arts Department of Arts Council England through the National Touring Programme. It was presented initially at the Institute of Contemporary Art in London, and afterwards went to the Cornerhouse in Manchester in collaboration with Digital Summer, and to The Public in West Bromwich as part of Fierce!festival. These subsequent presentations were slightly different, as the context called for change. Backend technology issues were also smoothed out. For more information about *Uncle Roy All Around You*, see: http://www.blasttheory.co.uk/bt/work_uncleroy.html (accessed April 2010).

²²⁷ Matt Adams, interview Brighton, 5 February 2010.

how it is documented reveals the framework within which artists understand, conceive, and develop their work.

Part of Blast Theory's practice and creative working process is to constantly invent and remain flexible in terms of techniques and strategies. Sometimes they start from a thematic or narrative perspective and other times from a set of questions, issues, or a particular kind of experience that they would like to explore. In the conceptualisation and development of their projects, Blast Theory employs a number of methods and strategies. While they have stated a number of times that they do not have a coherent or continuous methodology, and that working methods are contingent on the project at hand, their methods (although varied) share a common thread within a process that attempts to maintain the creative fluidity of a project's development. As such, I discern three different phases in which documentation plays an important role in the project. I define these, often parallel, stages as follows: *documentation as process*, in which documentation is seen as a decision making tool during the development of the work; *documentation as presentation*, or, the creation of audiovisual material about the work; and, *documentation for re-creation* in the future.

4.2.1.1. Documentation as process

Documentation as process refers to the notion of using documentation to make decisions about the nature of a work. Blast Theory places the malleability of a work's development as key to their creative process. For Blast Theory, any 'method' that appears too static – that would possibly hinder the expansion and growth of ideas in any direction – is hardly ventured into (or, if so, ventured into warily). Sometimes, almost up until the moment of presentation, Blast Theory is highly reliant on oral communication as a creative medium. They use conversation as a way to develop and flesh out ideas with one another. Storytelling, as Adams outlined, is used as a way to find the core elements of a project. He refers to the conceptual development process of scriptwriter Paul Schrader, who never writes anything down. By telling people the story, a space is allowed for things that are extraneous or 'superfluous' to the story. They can be removed or 'fall away' naturally over time, leaving the core elements in place (Thomson 1976).²²⁸ As Adams has explained, abstaining from writing too much down 'enabled all of us to have access, have equal access to the work. It means that it stays mobile'.²²⁹

While development through conversation affords Blast Theory a certain creative flexibility, it is also an integral part of their internal workings. They often find a need to communicate complex ideas and relate to one another in textual ways, particularly when dealing with players both online and in the physical world. For this purpose, they have increasingly turned to using whiteboards (dry-erase boards). In just one session, this tool allows them to write down ideas and issues they are working with that day. They can document them with photographs for later reference, then wipe the board

²²⁸ Filmmaker Stanley Kubrick describes 'non-submersible units' as key aspects of a work. Adams conceptualises that things are integral and cannot be sunk. For more information on the concept of 'non-submersible units', see Nelson (2000).

²²⁹ Matt Adams, interview Brighton, 5 February 2010.

clean for the next session.²³⁰ Having said this, at the time of *Uncle Roy*, they were not using whiteboards, but rather writing down ideas on lots of different pieces of paper. They also employed private notebooks, allowing each member to jot down ideas individually. The most important points would be typed and shared.

In the development process, Blast Theory employs a number of creative strategies to develop their works, including creating questionnaires, conducting interviews, role playing exercises for each other, paper tests and trails through the city. For instance, during a residency at Banff media centre just over a year before the release of *Uncle Roy*, the three core members of the group designed different questionnaires, interviews, and exercises for each other. For example, Ju designed a questionnaire for the other Blast Theory members that explored their relationships to the city. Questions like ‘where you walk, how close to the building you walk, where you put your arms when you’re walking, whether you look at people?’²³¹ were designed to question how one might feel on city streets. Through these ‘role-playing exercises’ they realised that they shared a similar sense of detachment in spaces they frequented. This reflection led to further conceptualisation of the piece. They also conducted interviews with people outside of the group, which informed the development of other aspects of the project, from broad reference material to issues the group wanted to explore. These exercises, and the group’s reflections, enabled them to consider what players would or would not do, and what their boundaries were, all whilst aiming to make the game mentally stimulating, but not too difficult to play.²³²

Testing is another documentation method used in the process and development of Blast Theory projects. Blast Theory tested the characteristics and possibilities of mobile devices by creating a series of interface prototypes to gauge whether or not they corresponded to the concept of the specific project. They also tested if these technologies were understood and accessible to the broader public. Members of the group were often the first testers. At various stages in the development process participants from the outside were brought in to test the setup devices. Sometimes they invited testers with a deep knowledge of the technology to get more precise and descriptive feedback.

To briefly summarise, the decision-making process emphasises oral communication, which is reflected in Blast Theory’s internal working process. Their ambivalence towards written documents (which according to them often leads to a hierarchical structure where the person in charge of writing has more power and control over the process) shows the importance of having equal collaboration in decision making and conceptual and design development within the group. The process of creating a non-hierarchical and decentralised internal structure is thus informed by a desire for openness and fluidity within the conceptual development of a work. Moreover, documentation of the process gives insight in the development of the work, which could guide or at least give clues to, what factors are important in decision-making.

²³⁰ Matt Adams, interview Amsterdam, 7 December 2009.

²³¹ Ju Row Farr, interview Brighton, 5 February 2010.

²³² Ibid.

4.2.1.2. Documentation as presentation

By referring to ‘documentation as presentation’, I focus on the material Blast Theory uses to explain and communicate their work. Documentation can be a manifestation of a registered or captured event that can take on many forms, such as notation, mapping, written descriptions, photography, film, or video.²³³ Audiovisual recordings provide a unique perspective on the history of art, a perspective that moves beyond images in books, words on paper, or abstract notations. They provide us with a more complete sense of what it was like to be there, at the event. Creating video documentation about an artwork is a popular practice with artists. This is not to say that there is a standard way of making video documentation. Practices vary greatly, focusing on specific elements of the artwork that are the most important to the people making the documentation. The endless styles range from screen-capture videos and documentary-style videos, to subjective video that only shows some of the experience of the work, a practice, as I will show, that is pursued by Blast Theory, and instruction videos that mimic popular videos on You Tube, for example, Aram Bartoll’s *How to...* video series (2009-11). Others go beyond capturing one’s own work and instead propose and invite other people to capture as many artworks as possible. For example, the work by Robert Sakrowski and Constant Dullaart on *netartdatabase.org* (since 1999). The latter example is an attempt to capture a ‘cultural and historical aesthetics’ and not only a work (Dekker 2011b).²³⁴ Needless to say, since net art consists of multiple objects, interactive components, or uses of multiple spaces (real and virtual), the use of video documentation can be extremely valuable, especially when trying to capture the working of a piece or show the experience it evokes with the audience. Nevertheless, as Adams remarks, it is not something that is easy to do. He explains the video documentation produced for their interactive virtual reality-based piece *Desert Rain*:

The problem here was to register the non-linear character of the piece. Therefore, the crucial question was how to bring together examples of different types of footage (and not so much which “bits” to use) so that the non-linear character of the piece would be sufficiently “represented” (Lycouris 2000).

Documentation is not uncontested.²³⁵ Especially in case of live performance art and dance video documentation (or even other forms of documentation) is seen as betraying the vivacity of the art form. The prospect of experiencing a mediated performance, even in written words, has disturbed many performance art scholars.²³⁶ Obviously any form of documentation will be a substitute for the

²³³ The word ‘capture’ means that something has been seized or taken control of. However, when applied to video, nothing really gets ‘captured’ or seized. ‘Video merely makes marks on a magnetic tape – marks which offer no guarantee of knowledge of the object that it is representing’ (Edmunds 2006). Nevertheless, in media art the term is now widely used for the process of documentation: ‘To record or make a lasting representation of (sound or images); as, to capture an event on videotape’, glossary, Inside Installations <http://www.inside-installations.org/onlinecoursevideodocumentation/module1/glos01.htm>.

²³⁴ See also n. 241 with regard to documenting audience participation.

²³⁵ See, for example, Alberro and Norvell (2001) who interviewed artists about the function of documentation of their conceptual artworks.

²³⁶ Peggy Phelan is probably one of the most cited with her quote ‘Performance cannot be saved, recorded, documented, or otherwise participate in the circulation of representations of representations: once it does so it becomes something other than performance’ (1993:146). More nuanced perspectives can be read in among others Reason (2003) and Remes et al. (2014).

original, but perhaps there are other ways of thinking about documentation. For example, can or should documentation evoke its absent object or event, or would it be enough to provide an impression or translate the atmosphere? Is it possible to think of an expanded understanding of documentation as presentation?

When it comes to capturing or documenting the final result, the live event, Blast Theory tries as best as possible to show the atmosphere of the experience. As Adams states: ‘It’s about getting that atmosphere correct where you can imaginatively engage with what it must have felt like to do that or be there’.²³⁷ The audiovisual documentation is partly directed, for example, by taking the point of view of one player and following that person while s/he plays the game. At times, and as unobtrusive as possible, the player was asked to repeat a movement. Becky Edmunds, a specialist dance videographer for Blast Theory among others, emphasises the subjective experience. She tries ‘to enjoy the gap’ between the live and the recorded by ‘providing small pieces of information through which a viewer might be able to actively reconstruct an imagined version, myth, or memory of what the event might have been’ (Edmunds 2006). Edmunds is not interested in providing the viewer with an ‘authentic’ recording. By showing restricted views of the body or small glimpses of the action, she draws attention to the gaps that documentation creates. Moreover, she is not trying to assess how the artist wants her to document the work. Instead, Edmunds engages with documentation as being inside and part of the work instead of being a neutral outsider. This approach reveals a new way of thinking about documentation that reflects the process of the event, while at the same time informing the work by serving as a way to preserve ‘tacit’ knowledge. The notion of tacit knowledge refers to the range of conceptual and sensory information, including all forms of knowledge that cannot be represented, fully articulated, expressed in formulas, or described in documents (Polanyi 1966). The notion of tacit knowledge is not uncontested and is often viewed as subjective in conservation, referring to the artist’s intent and the social and cultural context in which a work is presented or performed. Documentation is thus regarded as an important aspect of the process, which can be as creative and as challenging as the live event (Edmunds 2006).²³⁸ In this way, documentation can be thought of as a form of dialogue, reflection, and response which can be used both as a tool in the creative process and as a document containing tacit knowledge.

This way of looking at video documentation is also taken up by Fiona Wilkie. She proposed that watching video documentation can disclose alternative dimensions of the work (Wilkie 2004). She considered the meaning of the video documentation of Blast Theory’s performance installation *Desert Rain* and compared it to participating in the installation. By looking at the video documentation from a framework of site specificity she treats the work through a discourse of spatial engagement, in which the work operates between different spaces and contexts – in the case of *Desert Rain*, real (the

²³⁷ Matt Adams, interview Brighton, 5 February 2010.

²³⁸ This perspective is also shared by many fashion designers, emphasising the necessity to show the movement of clothes. As stated, for example, by costume designer William Ivey Long: ‘No museum should show dance costumes unless they also show them in motion’ (at SIBMAS, 10 June 2014, New York).

physical installation) and virtual space (the online participants, as well as the context of the Gulf War on which the work reflects). More importantly, video documentation, when viewed in a new context, evokes different connotations which, as Wilkie suggests, could add other layers to the work.²³⁹ As such, it implies that Blast Theory's video documentation adds new layers of meaning to their performances, which could potentially deepen the conceptual idea in new – and perhaps unforeseen – ways.

To conclude, Blast Theory's 'documentation as presentation' follows their 'open-ended' strategy in which hierarchy, or in this case one pivotal perspective, is avoided as much as possible. Rather, they embrace ambiguity and subjectivity as a strategy to communicate their work. This potentially allows documentation to develop as a critical space in its own right where the issues and concerns of the work are addressed through appropriate forms without necessarily becoming reproduction (Lycouris 2000). From this perspective, 'documentation as presentation' is understood as a mode of production as well as a mode of critical interpretation, which helps to overcome the fragmented view inherent in documentation. Finally, in the next section I will analyse how such an attitude will affect conservation efforts.

4.2.1.3. Documentation for re-creation

Next to their intense documentation strategies, both during the process of creating the work and in presenting the work, Blast Theory also puts a large emphasis on archiving their gathered materials.²⁴⁰ As a performance group working and communicating directly with the audience they see the voice of the audience as a central element of their archival practice.²⁴¹ One goal for keeping an archive is to preserve the potential and importance of live art, which is often marginalised due to the ephemeral nature of the work and, in the case of Blast Theory, technically complex, collaborative, and conceptually heterogeneous. Besides, making documentation and building an archive is for Blast Theory a means to show that artistic creativity is open to everyone. As they state:

We want to create an intellectually coherent powerful argument for diverse practices that refuse the reification of the object, that ignore the speculative economies of the art market and that treat their public generously as equals in a dialogue. (...) We have always sought to

²³⁹ This way the object, the video document, can also be regarded as a boundary object, passing between communities where it faces different interpretive strategies in each one. For further reading, see Star and Griesemer (1989). Latour (1996a[1990]) and Leach (2010) take the notion of the object further, claiming that the object has its own agency besides being merely a mediation tool. I will return to this use of documentation in a moment.

²⁴⁰ An impression of the size of their archive: 'Over the last 16 years we have meticulously archived every aspect of each project: creative notes, correspondence, publicity materials, press, design work, software, production manuals. The archive held by us includes 90 box files, 20 virtual models of cities and 900Gb stored on servers. Because we work in collaboration so frequently archival materials relating to our work are held elsewhere (such as the University of Nottingham), usually for technical or intellectual property reasons. These include logs, messages sent and received, audio recordings, etc..' Notes taken from a proposal that was used for *Legacy*, a one-off initiative developed in collaboration between the Live Art Development Agency and Tate Research, 2008. For more information: <http://www.tate.org.uk/about/pressoffice/pressreleases/2009/17509.htm> (accessed April 2010).

²⁴¹ There are a range of methods to document users' experiences, to provide multiple perspectives and layers of information, which could be used to create a dialogue between the ideal conceptual existence of the artwork and its actual existence (Jones and Muller 2008), or to guide further study and design of artworks (Benford and Giannachi 2011). The notion of the artists' art archives and archiving as such is much discussed but goes beyond the scope of this research. For further reading see, for example, Giannachi et al. (2010), who propose how various ways of documentation may be used to change archival structures.

distance ourselves from views of the artists as sacred or exceptional and from biographical or psychological readings. The archive can serve as residue of sainted artifacts and a touchstone of this approach.²⁴²

By using ‘documentation as process’ and compiling specific documentation that reflects the intention, concept and atmosphere of the live performance (i.e. ‘documentation as presentation’ and combining these in an archive), Blast Theory seems focused on future re-creation. But what are the chances that a technically complex work consisting of obsolete equipment can be recreated? When asked if it were possible to recreate the work, they replied that it would certainly be possible but would probably take a few weeks. Their statement became more problematic when I dug deeper and asked if it would also be possible to recreate the work 50 years from now and by someone else. A problem arises not only because of the obvious obsolescence of technical hardware or potential network dependencies, but foremost because changes in software configurations, notation or commenting on version updates happen at irregular intervals, making it harder to decipher the code making decisions.²⁴³ In addition, as mentioned in the previous chapter, one needs to know the historical context of the technology since it could (un)willingly influence the aesthetics and functioning of the work. This is also acknowledged by Blast Theory. Next to technical difficulties, the ‘performativity of the work’ needs to be documented. Tandavanitj remarks:

There is all sorts of specific learning about how you manage people in a specific situation. The front-of-house is probably well documented. But the scenography – the managing of getting people into a car without them noticing it, the way you give directions to people, the minutiae of dealing with people in those experiences – is probably not documented very well.²⁴⁴

To understand what this ‘performativity’ means, it is helpful to make a short detour to other disciplines like gaming or contemporary dance and music that struggle with similar problems, where a score, notation, or rule is easy to preserve but difficult to interpret (Wijers et al. 2010). For instance, in gaming, rules of the game can be kept. The game play can also be recorded to a certain extent. Furthermore, because of its digital nature, it is easy to capture all kinds of data about the game (Winget 2008b, Dekker 2010:7.1).²⁴⁵ But what do these recordings and saved data reveal about player experiences? With the aid of information technology like sensors we can save more data *about* performances than we could previously. But we cannot save the performance itself. Similarly, a contemporary dance performance is a living system that continues to develop. Because it passes through body movements, it is always in a state of development. Sometimes strategies from the field

²⁴² Notes taken from a proposal that was used for *Legacy*, see n. 240.

²⁴³ Nick Tandavanitj, interview Brighton, 5 February 2010.

²⁴⁴ Ibid.

²⁴⁵ There are several game preservation initiatives. However, most focus on arcade, computer, console, and electronic games of all forms and eras. Online games are often beyond the scope of research. See, for example, Game Preservation Society in Tokyo (<http://www.gamepres.org>). Software Preservation Society preserves software of classic games (<http://www.softpres.org>). The research projects *Preserving Virtual Worlds 1 and 2* focus on determining significant properties for a variety of educational games and game franchises in order to provide a set of best practices for preserving the materials through virtualisation technologies and migration, as well as provide an analysis of how the preservation process is documented (<http://pvw.illinois.edu>). Retrobase.net features a large database of screenshots and release details for classic videogames (<http://www.retrobase.net>).

of oral history or ethnographic ‘in-game’ research (following developer’s processes or participant behaviours in games) are used to capture the participants’ experience, or to shed light on the development process. Oral history or ethnographic research can also reveal the design choices that underlie the work or the relationship between design decisions and the experience players had while interacting with the work. The objective is to shed light on the process and hence involve transference of knowledge about design, process, and experience, which helps sustain or recreate the work (Winget 2008b, Dekker 2010:7.1).

The majority of the technical issues around re-creation also involve the availability of rights-free information. This could pose a problem for Blast Theory in the future since they work with the Mixed Reality Lab (MRL) at the University of Nottingham on the development of code. Although a lot has been written academically about the code and programming, this does not necessarily mean the information is freely available. I will come back to the (dis)advantages of open source practices in Chapter 5. For now, I should note that Blast Theory likes to be as open as possible, both as a principle and part of their working method. Similarly, Steve Benford (MRL) describes the value of documentation for future re-creation:

In some ways, [these works] exist primarily at the level of trace. It is precisely because its “presence”, whilst producing powerful mechanisms of engagement, is dispersed that it is difficult to document it in action. I now wonder whether a different, more flexible and rhizomatic, technology is needed to record and analyse this kind of work as well as track the fascinating processes that are at the heart of its inception.²⁴⁶

Although Blast Theory says it is possible to recreate the work, not everything is written down, annotated or documented in a way that it is easily traceable. As I will explain below, in museums documentation models are used to bring together information that is necessary to re-create a work. Museums might also help document the work in a systematic way in order to re-create it at a future date. Of course the question of desirability should be addressed, but more importantly it should be asked whether or not, and in what ways, such a strategy can or will change the work? To answer the first part of the question I will compare and analyse existing documentation methods that are developed by museums, or that came out of collaborative research approaches in conservation and documentation. I will look at the possibility of using or adapting an existing documentation model for use in net art practices. Through this analysis, I will shed light on the consequences this methodology might have on the works.

²⁴⁶ Steve Benford reminded the team that they should discuss the project’s documentation in terms of deliverables and determine what might be interesting about the piece for future show cases, i.e., what ought to be documented in relation to the HAU opening and what should be produced after the event. Quote from: <http://presence.stanford.edu:3455/Collaboratory/627> (accessed April 2010).

4.3. Documentation in conservation practices

Although the term ‘documentation’ is used differently in museology, conservation, art history, and the art trade (Flügel 2001), I distinguish between the multiple forms of documentation and their various functions: first, documentation produced for publicity and presentation; second, for purposes of reconstruction or preservation; third, for describing processual changes in the appearance of a work; fourth, for developing an aesthetical and/or a historical ‘framework’ or reference; fifth, for educational purposes; sixth, for capturing audience experiences; and seventh, for capturing the creative or working process of the artist(s). In conservation practices, documentation is primarily made and used for reconstruction and preservation, and generally understood as the process of gathering and organising information about a work, including its condition, its content, its context and the actions taken to preserve the artwork. Other types of documentation, for example, flyers or videos that are produced for publicity and presentation, are also kept but are often regarded as being of secondary importance and stored in the ‘documentation archive’ instead of the ‘collection archive’. As such, for a long time this type of documentation was not considered of great relevance to the re-creation of a work.

With the arrival of more live, ephemeral, networked, and processual artworks, documentation – as the remaining physical trace of a work – is at the center of conservation strategies. New ways of thinking about documentation have emerged. In many cases, documentation is the only remaining trace of the work (Depocas 2001).²⁴⁷ Moreover, the increasing digitalisation of information has started many discussions on the issue of long-term access to information.²⁴⁸ Several questions are raised, among others: How and when should information be shared, and what kind of audiences (professional and/or public) should have access? What are the primary issues that must be taken into consideration in areas of policy, ethics or values, and resource allocation? The aim in answering these questions is to share and compare experiences and priorities, which will enhance scholarship and learning. Well established organisations often take the lead in organising conferences and discussions, as Philippe de Montebello, director of the Metropolitan Museum, stated during an international conference about *Issues in Conservation Documentation* (2007): ‘What we have discussed could conceivably—and probably should—become institutional priorities, and what is really left is for us to come up with the will and the resources to begin the process’. It is important to stress that these large initiatives often use extremely standardised procedures which, especially for smaller organisations or artists’ initiatives, are often difficult to follow. Criteria for selection and standardisation are often based on assumptions that are not always made explicit. To circumvent standardisation it is imperative to analyse and experiment with different database interfaces and their underlying systems.²⁴⁹ At the

²⁴⁷ For an elaborate account see among others: Muñoz Viñas (2005); Laurenson (2006); and the anthology by Richmond and Bracker (2009).

²⁴⁸ See among others: Depocas (2001); *Issues in Conservation Documentation*, conference organised by the Andrew W. Mellon Foundation in 2007, <http://mac.mellon.org/issues-in-conservation-documentation> (accessed January 2010).

²⁴⁹ Bowker and Star (2000) review the status of classification and shed light on the centrality of classification systems. They provide insight into their construction and our relation to them, as well as the associated issues. At the same time they also provide important questions to ask about the nature of classification and its relevance to information systems.

moment, several large information management systems are being developed to facilitate exchange. These so called, Collection (or Content) Management Systems (CMS), also known as Information Retrieval Systems, describe and put existing documents into a structure. These systems are becoming an integral part of managing and documenting collections. They are built with software that allows collecting institutions to manage data about their collections. In other words, the system allows users to search for documents, information within documents, and metadata about documents within the database, as well as its relational databases. OASIS, CASPAR, INCCA, 2IDM, among others, are examples of these documentation managers in conservation research.²⁵⁰ The actual documentation in these information management systems consists of models that assign meaning to objects and events, which locate relevant data by referring to research activity by locating relevant data.

These large resource and management systems are particularly useful to find information about organisations and research projects. However for individual case studies based on research, they are not necessarily interesting because the data is too broad. For these cases, numerous models exist to describe an artwork. There are several accepted standards, particularly for the handling, installation and care of a work (Real 2001). But for more complex contemporary installation and time-based media works, these standards have only recently been drawn up.²⁵¹ Most systems use the Dublin Core Schema, a small set of meta data terms, as a reference to describe their resources, which are then adapted to fit specific artworks.²⁵² The advantages are that it allows for gaining a better understanding of the kinds of descriptions used. The schema also facilitates the development of better mappings and translations between different syntax. However, such comparisons are more difficult to make when handling specific artworks like net art, installation art or performance art, whose documents do not fit into prescribed taxonomies.

As mentioned, conservation as a practice is not as fixed as one might assume and hence documentation strategies vary widely.²⁵³ In 2004, *Inside Installations*, a large-scale international

²⁵⁰ OASIS, Organisation for the Advancement of Structured Information Standards, <http://www.oasis-open.org>; INCCA, International Network for the Conservation of Contemporary Art, <http://www.incca.org>; CASPAR, Cultural, Artistic and Scientific knowledge for Preservation, Access and Retrieval, <http://www.casparpreserves.eu>; 2IDM, Inside Installations Documentation Model, <http://www.inside-installations.org> (2IDM emerged from the project group 'Documentation of Contemporary Art' within the German Conservators Association – Verband der Restauratoren). Similar initiatives have also been taken up in other disciplines. For example, in dance an important role is played by the DHC, Dance Heritage Coalition in the US and PARIP based in the UK, the latter focused mostly on the pursuit of practice as research / practice-based research. <http://www.danceheritage.org> (accessed January 2010). PARIP, Practice as Research in Performance (<http://www.bris.ac.uk/parip>) was a five-year project by the Department of Drama: Theatre, Film, Television at the University of Bristol. After the five years, the Arts Council did not continue its funding. As such, it is a 'sleeping archive'.

²⁵¹ It was soon acknowledged that the best way to preserve time-based media is collaboratively. In 2003, a consortium of curators, conservators, registrars and media technical managers from New Art Trust, MoMA, SFMOMA and Tate organised 'Matters in Media Art', a multi-phase project designed to provide guidelines for the care of time-based media works of art: <http://www.tate.org.uk/research/tateresearch/majorprojects/mediamatters/> (accessed January 2010). Similar research projects and follow-ups were initiated by *Inside Installation* (2004-7), the Ludwig Boltzmann Institute (<http://media.lbg.ac.at/en/>) and the Daniel Langlois Foundation (<http://www.fondation-langlois.org>). The initiatives depend on private and public funding, which jeopardising their existence and research because they are not very sustainable in the long run. Many small scale research studies were undertaken next to these large scale initiatives. They also learned from other disciplines. For example, 'An Architecture of Interaction' (<http://www.rhiz.eu/artefact-17010-en.html>) developed a toolbox to talk about and compare the processes, meanings and effects of interactive work, especially the stages of interactive work where no outcomes or precise outlines can be defined beforehand. For more information on the issue of sustainability of these initiatives, Dekker (2010).

²⁵² Most of the information about Dublin Core can be found online, <http://dublincore.org/>.

²⁵³ Bracker and Richmond ascribe these differences to various factors: conservation emerged from within specialist practices dealing with varied materials and object types from within different contexts. These origins and their evolution have led to different conservation practices even within the same museum (Bracker and Richmond 2009:xiv-v).

research study, was set up to challenge prevailing views on conservation.²⁵⁴ In this extensive three-year project, thirty-three complex installations (many multimedia) were re-installed, investigated and documented. By sharing their experience, project participants were able to work together to develop guidelines and tools within various research themes. Case studies on artists' installations brought about a wealth of research on specific practical guidelines. At the same time, new questions arose while investigating computer-based installations. These ranged from technical and theoretical questions to artists' intentions on issues of hard- and software storage and maintenance. What is the lifespan of computer based installations? How should sound and image quality be compared? How is authenticity and artist's intent maintained? Will reconstruction become retro-kitsch due to technical components? Will guidelines that are written now be legible in fifty years? Should historical changes be noted, and if so should the date of the work or the work's technical progress be recorded? What is the role and responsibility of the artist, conservator and curator?²⁵⁵

Many of these questions inform and overlap with my research into net art. However, the questions multiply when discussing documentation methods for the conservation of net art.²⁵⁶ The documentation of net art is an especially demanding field, because it requires representation of heterogeneous aspects of a particular work – from hardware, software, and network context to human and mechanical, physical and virtual interaction. Due to technical variability, it makes sense to state that it is not possible to preserve actual net artworks. I still recall the facial expression of Hungarian/German artist Péter Frucht after attempting to reinstall his year old installation *iow...* (2002). He came face-to-face with the fact that Internet connection speeds had changed. Whereas his installation was made to react to the speed of a dial-up connection, our exhibition space had just installed an ADSL connection. The live Internet feeds were so fast it was impossible to read the actual content. Luckily the Internet speed could be reconfigured. There are many people who argue that emulation such as this is possible and even desirable, but at what expense?

As briefly described in Chapter 2, emulation is a process in which a work gets transferred onto a new system without losing its original aesthetics or functions. It is a method that is often used in preservation of contemporary artworks, but it falls outside conventional preservation methods. Some would say it is not preservation at all (Jones and Stringari 2008). Conservator Jeff Rothenberg (1999) has been a resilient defender of emulation. Indeed, his examples prove the value of emulation. However, he has not taken into account projects that depend on networked executions. In other words, no matter how faithful the emulator may be, since many of today's programs execute in a context of network services (which also execute in network services, and so on *ad infinitum*), simply preserving

²⁵⁴ See, <http://www.inside-installations.org>.

²⁵⁵ The lessons learnt from Inside Installation are now being taken up by PRACTICs of Contemporary Art: The Future (Practices, Research, Access, Collaboration, Teaching In Conservation). In this two year research project (2009-11), 34 leading European museums, institutions and universities joined hands in giving direction to the assessment and implementation of knowledge gained through European projects of the last decade, as well as set the course for the future in key issues of conservation, preservation, education and public access to conservation. More information: <http://www.incca.org/projects/64-current-projects/475-practics> (accessed February 2010).

²⁵⁶ See Bruce Sterling (2003) for a poignant comparison between the issues involved in preserving a nineteenth century oil painting and a twenty-first century computer based artwork.

the code and the ability to re-execute it is not enough if the network services they depend on are no longer available, or return different results. Thus, while emulation may be an important preservation strategy for contained artworks, it is far from a ‘universal’ solution for network dependent works or works made in commercial platforms.²⁵⁷

As mentioned in Chapter 2 and 3, in general, curators and conservators try to show artworks in the most authentic way possible. And where possible, decisions are guided by the artistic intent that is documented in writing, photos, video, or in a dedicated model. Whereas little thought is given to strategies for video and photography documentation, several attempts have been made since the turn of the century to capture work in a documentation model. The purpose of these models for media art conservation is to allow for future re-creation or re-execution. For a long time, the information captured consisted of the following: artist name, type of object, materials used, dimensions of the work and space, and the presentation history of the work. But, how flexible are these models? How do these models deal with change, process and ambiguity? To answer these questions, I analyse and compare several existing documentation models that are developed in the visual arts. The selection is made on the premise that the systems employ new methods and structures that are especially relevant and developed for net art. The following question is formulated and functions as a reference for discussion and comparison: In what way can documentation, which is used to document and describe complex media installations for the purpose of re-installation, be applied to the documentation of variable artworks that are based on obsolete technology?

4.3.1. From object dependencies to behaviours

Because of the complex, variable, and interactive nature of net art, it comes as no surprise that most museums and institutes have not taken up the challenge to collect, and consequently start to think of ways to document projects like *Uncle Roy All Around You*. But in the past decades, some attempts have been made to see the documentation of these variable works in another light.²⁵⁸ The before mentioned work by the Variable Media Network (VMN) is the best known.²⁵⁹ Although mostly interested in the preservation of contemporary artwork, the VMN’s strategy is very much focused on methods for documentation. Due to the changing materials and mediums used in art, roughly after the

²⁵⁷ A reason to opt for documentation instead of emulation is that most net art projects are context dependent and in some cases an execution or interaction with a website is just one instance of a unique experience. This means that works are relevant only during a specific time or in a specific context. For example, after Google changed their API it did not make sense to continue the work *The Global Anxiety Monitor* (2006-11) by De Geuzen, and the artists choose to make a documentation video about the work while it was still functioning in the right context. This would emphasise the unique experience, which is very hard to repeat or preserve with the fidelity Rothenberg envisages.

²⁵⁸ The need for finding new strategies in the documentation of art has played a crucial role since conceptual art (where some theorists place the sources of new media art), performance art and other ephemeral art forms. This shift was also made possible because new methods of documentation became available, notably the use of video to document events and performances. Whereas film was expensive and difficult to manage, the cheaper and more easily handled video camera and editing possibilities led to an increase in documentation strategies and consequently to new art forms.

²⁵⁹ The Variable Media Initiative was initiated in 1998 by Jon Ippolito, at the time an associate curator at the Guggenheim Museum in New York. In 2002, the Daniel Langlois Foundation teamed up with the Guggenheim Museum to develop and further promote the variable media concept. One aim of this partnership is to forge an international network of organisations with a common goal of devising useful methods and tools. <http://www.fondation-langlois.org/html/e/page.php?NumPage=98> (accessed 26 April 2009). In 2007, building on the work of the VMN, a broader coalition ‘Forging the Future’ was announced, who further refined and distributed free and open-source products that boost access and aid in preservation. See <http://forging-the-future.com/>.

1950s, traditional ways of preserving and documenting works were no longer satisfactory. The VMN propose a strategy where artists are encouraged to define their work independent of medium so that the work can be translated once its current medium becomes obsolete. The approach is centered on the content of the work rather than its medium or physical manifestation. In addition, they concentrate less on an artwork's individual technical components and more on what one of its founders, Jon Ippolito, has coined the 'medium-independent behaviours' of the work (Depocas 2003:48). By using the term 'behaviours', i.e. something that behaves or performs, the VMN tries to come up with a methodology that works across mediums and therefore can still be recognised in the far future, a future where someone might not understand the term 'U-matic' (a videocassette format used in the 1970-1980s), but will recognise the meaning of the term 'installed'. Shifting the focus to a work's behaviour says something about the presentation and perception of the work – can the work be installed, performed, reproduced, duplicated, interactive, encoded, networked, or contained, as such? On the other hand, traditional methods for describing an artwork stay closer to 'object dependent' terminology which reveals little about its functioning – i.e., name of the artist(s), date of the work, medium used, and the dimensions (height, width, and depth). To distil the most desirable way for future presentations, the VMN developed a questionnaire called the Variable Media Questionnaire (VMQ) to get at the core or, as Ippolito calls it, the *kernel* of the work (Depocas 2003:47).²⁶⁰

The emphasis on artists' interviews is a relatively new phenomenon in documentation practices. Although the first examples of artist's consultation for conservation purposes is traced back to 1939 when the Committee of Paintings of the Community of Amsterdam sent a questionnaire to a number of artists who sold their paintings to the Stedelijk Museum of Amsterdam (Hummelen and Scholte 2012), it is only from the late 1990s onwards that semi-structured interviews directed towards the conservation of contemporary art have become more popular. These face-to-face, in-depth interviews allowed for more flexibility by stimulating open conversation, as opposed to the more restricting questionnaires (Mancusi-Ungaro 1999). Even though these days the artist's interview is considered an indispensable tool in conservation practices, there are of course some theoretical and practical problems to be considered. In conservation theory today, the interview format is no longer treated as a one-way, straightforward, value-free tool, but rather as a topic in itself that is increasingly met with methodological reflection (Van Saaze et al. 2010). It is beyond the scope of this research to deal with these aspects in depth, but it is important to note that the concept of a questionnaire suggests a one-way knowledge transfer (predefined questions are answered by the artist). On the other hand, the interview-format inherently implies a two-way knowledge process where artist and interviewer construct knowledge together through their specific interaction. In the social sciences, a vast amount of literature is dedicated to interview practices and questions of how to conduct interviews effectively by enhancing the quality of the interaction. In studies on the interaction between interviewer and

²⁶⁰ The term 'kernel' is interesting because it signifies a programme in computing that manages input/output requests from software and translates them into data processing instructions for the central processing unit. However interesting the term, during several private discussions I noticed that conservators, curators or researchers with little knowledge of computing find the term confusing.

interviewee, particular attention is given to issues of self-awareness, integrity, openness, context, and building trust.²⁶¹

The questionnaire prompts questions for each inherent artwork behaviour that requires preservation. However, it is not intended to be exhaustive. The VMQ is foremost a vehicle to incite questions that should be answered in order to capture artists' desires about how to translate their work into new mediums after expiration of the work's original medium. By bringing perspectives from conservators and curators together with artists, and if possible their technicians, programmers, and engineers, the VMN approach tries to establish a better understanding of how the work should evolve and be handled over time in order to preserve its 'ephemeral character':

A questionnaire [stimulates] responses that will help to understand the artists' intent. The questionnaire is not a sociological survey, but an instrument for determining how artists would like their work to be re-created in the future – if at all. (...) The results of the questionnaire, the variable media kernel, enter a multi-institutional database that enables collecting institutions to share and compare data across artworks and genres (Depocas 2003:47).

The VMQ is an invaluable guide for conducting artist interviews, as the medium-independent line of questioning often elicits highly descriptive responses to questions about a work's past and future incarnations.²⁶² The VMN approach received high acclaim from many institutions and in various theoretical discourses. It is surprising therefore that the final online questionnaire moves away from the behavioural methods, and instead focuses again on an object oriented way of documenting. One of the reasons could be that online systems proved too difficult and restrictive for people to use. This was also one of the outcomes of earlier evaluations. The project's database and way of structuring information seemed (while still under construction) highly descriptive and too elaborate for a realistic and easily repeatable documentation project (Jones 2007). Nevertheless, the VMQ is valuable as a tool for interview practices because it takes into account both the concept of the work and the context in which it evolves. It confirms the necessity to let go of traditional conservation methods that focus on the re-creation of the work as it originally appeared and instead tries to think of new ways to document and reinstall obsolete artworks.

Whereas the VMQ certainly enticed new ways of thinking about the preservation of variable artworks, many questions remain: Is a questionnaire based on artist interviews sufficient in order to understand the working of the artwork? Does it provide sufficient insight into the creative and working process? Does it reflect the interaction and experience the artwork invokes, both in relation to and between the participants and the context in which it is enacted? These and other questions are taken up and further developed in new models and methods by other organisations that share concern for the documentation of obsolete artworks. In order to discuss the advantages and limits of these different models I briefly elaborate on three approaches that have received high acclaim over the past years

²⁶¹ See for more information: Aunger (2004); Chirban (1996); Hammersley and Atkinson (1983); Walsh (1998); Beerkens et al. (2012).

²⁶² Or in case the artist has passed away, the ones closest to the artist or artwork, for example the collector, programmer, or technician.

(mostly due to their unconventional approach to conservation and documentation, which has been adapted and used by other organisations in various ways). Next, I compare the different strategies to see whether they are useful for (future) conservation of *Uncle Roy All Around You*.

4.3.2. Short outline of different documentation models

V2_: Capturing Unstable Media Conceptual Model (CMCM), 2003

One of the first new approaches to documentation came from V2_Organisation at the Institute for the Unstable Media in Rotterdam in the Netherlands.²⁶³ The Capturing Unstable Media Conceptual Model (CMCM) was developed in 2003 as a conceptual model for documenting and describing newly created electronic art installations in lieu of recreating or preserving existing works. Notwithstanding, it provides several potential applications for the documentation of every aspect of the design process, which could potentially influence preservation. V2_ distinguishes three phases in the development of a work that all require different documentation strategies: (1) The research phase, in which the draft of the project concept, research of required know-how, design, and the first conceptual developments of the project take place; (2) the development phase, in which the actual hard- and software development takes place and its outcomes are tested and put together in a specific configuration or setup, and (3) the implementation phase, in which the results of research and development are implemented in a specific environment. Each of these phases is associated with different types of documentation. In the first phase, documentation is focused on the conceptual draft and the reporting of technical (im)possibilities, including changes that have taken place. In the second phase, technical specifications of the materiality, including specifics of the physical space and the artwork's construction, are noted. In the last phase, dependencies and relations between different components are mapped. Finally the functioning of the artwork, if needed in relation to visitors, is recorded on video.

More than any of the other documentation models, V2_'s perspective balances the intersections of art, science, and technology. Their strategy is to document the environment in which electronic art functions. This notion of capturing details about a work is considered complementary to traditional preservation methods. V2_ reused the set of attributes, components, and behaviours of variable media, as distinguished in the VMQ. They complemented the VMQ with missing components and essential aspects identified as definition of concepts. V2_ focused on several manifestations in a line of work rather than on reconstruction and display of a finalised artwork, including all possible components of these manifestations and the interplay of these components. Unfortunately, due to lack of funding and available time, the model was only used for a brief period, albeit successfully.²⁶⁴

²⁶³ <http://capturing.projects.v2.nl> (accessed November 2012).

²⁶⁴ Personal conversation with one of the researchers, Sandra Fauconnier, December 2009, Rotterdam.

MoMA, New Art Trust, SFMOMA, Tate: Matters in Media Art (MMA), 2004 – present

Matters in Media Art is a multiphase project designed to provide guidelines for taking care of time-based media works of art (e.g., video, film, audio, and computer based installations).²⁶⁵ The project was created in 2003 by a consortium of curators, conservators, registrars, and media technical managers from MoMA, New Art Trust, SFMOMA, and Tate. The museum consortium launched its first phase on loaning time-based media works in 2004, and its second on acquiring time-based media works in 2007. In 2009, MMA entered its third phase (estimated delivery 2015), and is looking specifically at challenges surrounding Internet-based (SFMOMA with Bay Area Video Coalition, BAVC) and computer-based arts (Tate). The aim is to blend traditional museum practices with new modes of operation that derive from and respond to the complex nature of media art installations.

MMA provides a practical response to the need for internationally agreed-upon standards for the handling, installation, and care of time-based media artworks. The research resulted in templates that can be used in the acquisition process of a work, which is divided into three overlapping phases: pre-acquisition, accessioning, and post-acquisition. MMA describes them as follows:

- The pre-acquisition phase is when you gather the information necessary in order to make an informed decision.
- The accessioning phase is the phase where the necessary legal transactions are undertaken and you make sure that everything is received that was agreed on as part of the purchase.
- The post acquisition phase is where you integrate the work into your collection and prepare it for a life as part of your collection.²⁶⁶

To mark the processes in the three phases, a ‘process diagram’ was developed in which the often non-linear acquisition process is visualised (Fig. 4.5). The circular structure resembles the fact that the different stages involve concurrent activities and feedback and thus may overlap. Moreover, they ‘convey the sense of a snowball effect – where information was gathered throughout the process’.²⁶⁷ The attempts to include and depart from the process of the work are very valuable. Likewise, the open structure of the template invites users to add to and configure the template how they see fit.

MMA provides a basic framework to prepare an artwork for long-term preservation and future installation. Most of the information that is asked for in the model is based on meta-data gathering, but the open structure could ideally lead to more detailed responses. Moreover, MMA stresses that their templates are merely ‘pointers’ that can be modified by the user and should, ideally, prompt appropriate questions/answers. However, some parts are more prescriptive than others, which might make it more difficult to think outside of the given options. Overall, the templates resemble the approach of the VMQ, but whereas VMQ has a specific focus on behaviours of the artwork’s materials, MMA follows a more established line of questioning.

²⁶⁵ <http://www.tate.org.uk/about/projects/matters-media-art>.

²⁶⁶ <http://www.tate.org.uk/about/projects/matters-media-art/using-matters-media-art-resources>.

²⁶⁷ Ibid.

Richard Rinehart: The Media Art Notation System (MANS), 2005

The Media Art Notation System is the result of research by Richard Rinehart in which he proposes a new approach to the conceptualisation of digital and media art forms.²⁶⁸ His research is an outgrowth and continuation of two earlier projects: Archiving the Avant Garde and the Variable Media Network. Rinehart intends to inform a better understanding of media art forms and to provide a descriptive practice for preservation. MANS has three levels of implementation that progress from simple to more complex. The layers consist of the conceptual model of documentation, the preferred expression format (vocabulary) for the model (the interpretation of DIDL XML), and, its top layer, the score, which serves as a record of the work that is database-processable (Rinehart 2004). The core concepts form a ‘broad strokes’ description of the work. This broad description could be used by the artist or museum at the time the work is created or collected. Further details, alternate accounts, and audience annotations can be filled in later in the life of the work. MANS provides a framework for reflection on the logical arrangement of collected elements, which can be distributed and archived through a website simply by broad type or general categories (for example, interviews, installation views, technical details and hardware, exhibition context, other installations, and audience interviews). This way, any structure can be applied to it. Connections can also be made through tags, keywords, or other visualisation tools.

The theoretical approach was explored through issues raised in the process of creating a formal ‘declarative model’ (alternately known as a metadata framework, notation system, or ontology) for digital and media art. As described in Chapter 4, Rinehart used a musical score as a metaphor to describe media art. According to him, it follows a similar composition in which the essential concept or score is more important than the instruments or hardware that are used to perform or install a piece (Rinehart 2005:2). The MANS score represents a logical media-independent backbone for the work that relies on the original files to provide detailed functionality and appearance. By taking the musical score as a metaphor and method, the model has ‘a flexible yet robust structure and incorporates the passage of time and the possibility of change’ (MacDonald 2009:63). The conceptual idea of a score, as a fixed form yet variable in its execution, is interesting. However, using the musical score as an example is questionable because nowhere is the difference between the written score and the performance so contested as in musicology (Cook 1999), and as I explained in the previous chapter, the notion of score is problematic because in its execution code can change, unlike musical notation. Moreover, MANS is presented as a metadata framework. As such, it does not overcome the problems inherent in text-based representational frameworks that describe non-textual information.

To briefly summarise, it is extremely difficult to describe and translate an artwork into a formal system – perhaps even more so for an artist. For example, emotions and symbolism are hard to

²⁶⁸ <http://www.bampfa.berkeley.edu/about/formalnotation.pdf>.

communicate in a traditional sense, and at times an artwork by intention negates such interpretation (Svenonius 1994). Nevertheless, some kind of standardisation is needed when trying to conserve an artwork. In the following section I will compare the different strategies and propose a direction for the development and extension of this ‘impasse’.

4.4. Comparing strategies

The VMN, MMA and MANS models allow for levels of description that relate to the work as a whole (in its final presentation phase), as well as more detailed descriptions of specific iterations or occurrences. In the case of MMA, there is a short subsection that asks for the ‘production history’, and who built the software. MMA also asks if any modifications or upgrades were made, for what reasons, and if the software has any dependencies to other components of the system. Generally, emphasis is placed on the present or future presentations of the work. An emphasis on the final presentation is of course not surprising; most artworks are first seen in the process of acquisition instead of production. Whereas in archival literature there is a recognition that ‘preservation begins with creation’, these models hold on to more traditional ways of dealing with objects and documents, and are less likely to move towards a more holistic approach (Water & Garrett 1996).²⁶⁹

From this perspective, the CMCM model is particularly interesting because it highlights the creative and production process of the work by emphasising the interaction between the work and the stakeholders. Moreover, next to a detailed description of the resources, CMCM focuses on the relationships between entities in the construction and execution of the work. It is unfortunate that this part of the model is also the least described. For example, the complex elements of interaction are left to ‘well-chosen documentation’. V2_ acknowledges that more research is needed in this field and suggests that researchers look at appropriate models in the social sciences, where methods or standards for registering social behaviour and intercommunications between humans and machines are under development. I will return to some possible examples in the following section when discussing the work by Piotr D. Adamczyk. Even though the CMCM model is not intended for preservation, it provides interesting opportunities for a form of documentation that moves beyond mere descriptive, comparative, and mapping exercises.²⁷⁰

Present documentation models face several challenges in more or less detail. First, the models rely, at least partly, on ‘artists’ intentions’. However, artists’ intent is not easy to extract, formulate or even comprehend by either the creator or interviewer. As such, it can be a difficult and problematic strategy.²⁷¹ It is important to realise that an interview is always a reflection of a specific moment in

²⁶⁹ See also: deLahunta and Shaw (2006); Winget (2008a); Dekker (2010).

²⁷⁰ The idea of providing relations between different components (technical specifications) and occurrences (various situations and presentations: the ideal situation and minimal requirements) is further developed in the context of Inside Movement Knowledge. Elements of different models are adapted to the specific needs of contemporary dance documentation. See: Van Saaze (2010). A model that focuses on how participatory art and design projects develop using different boundary objects is developed by Huybrechts (2009).

²⁷¹ See, among others: Van de Wetering (1996[1989]); Sloggett (1998); and Beerkens et al. (2012).

time. It is never value-free and always influenced by the specific background, expertise and personality of the interviewer and artist, as well as the interaction between them (Van Saaze 2010, Beerkens et al. 2013). Nevertheless, a slow movement in this direction can be seen, especially concerning contemporary artworks where the artist's involvement in conservation practice is regarded as a necessity, and where the artist becomes *the* stakeholder in the perpetuation of the work (Van Saaze 2009:106-111).²⁷²

Secondly, as mentioned in the previous chapters, most net art practices deal with multiple creation practices and contexts that are uncertain. At the moment, this is partly reflected in the models in their ideal past and present states. But these different parameters might not be sufficient to account for the level of or need for variation that is inherent in the work. As games researcher Megan Winget (2008a) suggests, a deeper understanding of the general creation behaviours and methods used by media artists will augment the discussion regarding the challenges of digital art collection and preservation.

A third pitfall of the models is their highly prescribed structures which, as mentioned, make it difficult to implement a realistic and easily repeatable documentation project in conservation practice, especially outside the field of installation art. Most models are established by the conventions of the information classifications with which they are most similar. This is not only important to realise from an ideological point of view but, on a more practical note, it means that once classifications, tags, or expressions change, so will the usability of these models.²⁷³ Therefore, the re-creation of a work requires a thorough understanding of the context in which the information and organisation of the work are made. As it is, there is a need to document the context of documentation creation. The vocabulary initially suggested by the VMN is exemplary in this respect. The third-generation VMQ, that was presented at the DOCAM Summit in Montreal (March 2010), looks at artworks as ensembles of components instead of behaviours, as discussed in the earlier version. This would be more intuitive for registrars, conservators, and other arts specialists. As Ippolito explains:

The purpose is to understand the key elements of a work that are critical to its function, such as source code or media display. Acknowledging the relational character of much contemporary art, these parts extend beyond hardware to include environments, user interactions, motivating ideas, and external references.²⁷⁴

The relational character of artworks, and also the relation between different institutes that collect similar works, is extended to a 'metaserver', which creates automatic links between records in

²⁷² For a more detailed analysis of the tension in the relationship between artist (intent) and museum conservators, see Van Saaze (2009). The integration of the artist in the conservation practice has led, of course, to many discussions about the degree of the artist's involvement. See among others: Buskirk (2003) and Kwon (2002), who describe the interlocking relationship between artist-artwork-process, especially in site specific work. On the role of the artists in museum practice (conservation and presentation), see a.o. Davenport (1995), Sturman (1999). And on the issue of the 'final artwork', see Becker et al. (2006:1-20) and Stringari (1999).

²⁷³ See also Taylor (2014) on the challenges for collecting media art in terms of defining the work in collection management systems, which often do not recognise the terminology or lack space to elaborate on specific details. However, with the accumulation of information the challenge of traditional storing systems are likely to become less relevant, rather ways of accessing information will become important (Bowker 2007).

²⁷⁴ Private e-mail correspondence (22 February 2010).

questionnaires (Sanchez and Eckert 2013). This means that, visibly within the system and alongside one's records are other records that match similar criteria. Arguably, this could increase the invisibility of the system's structure, obscuring underlying criteria and categorisation. Although beyond the aims of this research, one way to overcome this, as also suggested by Bowker and Star (1999), is to follow a contentious classification system, which also means gaining a deeper understanding of how different systems of classification lead to various understandings of cultural forms and encounters. Important as these systems may be, as many people working with conservation and documentation case studies have argued, to be able to document an artwork, it needs to be presented (Dekker 2010). The installation of a work facilitates the detection of problems and provides a better view of the specific decisions undertaken or methods used in the creation of the work.²⁷⁵ For this reason, some people argue for more presentations to enhance the visibility and understanding of the way these artworks function (Dekker 2012a). As such, it could be said that presentation leads to preservation.

Despite its obvious classification and system challenges, the VMN questionnaire remains a valuable tool to discuss the work and discover its core intentions – that is, the most important parts of a work. Even though the VMN approach to documentation, and its emphasis on behavioural elements, might not prove successful, it certainly entices new ways of thinking about the preservation of artwork. More specifically, it confirms the necessity of letting go of traditional preservation methods that focus on the re-creation of works regardless of artists' intent, as well as suggests new ways to document technically obsolete artworks. Nevertheless, questions remain. For example, is a written questionnaire sufficient in order to understand the experience of the artwork? And more generally, can documentation also be a potential for experiences? A description and photo can give an understanding of the piece, but these are far removed from actually experiencing them.

Information scientist Piotr D. Adamczyk explored how the VMQ and CMCM described human-computer interaction in new media installations (Adamczyk 2008). His analysis showed that the models work in terms of documentation or accession in a museum context, but often failed at recounting the participatory context. Adamczyk suggests using human computer interaction (HCI) ethnographic methods to better capture audience experiences, yet others are more inclined to use strategies from the field of oral history (Muller 2010). These two strategies meet at their belief that participant experiences 'would offer rich and varied portraits of how the artworks existed in experience and would necessarily widen our understanding of the relationship of media art to its social and cultural context' (Muller 2010). However, attention to audience experience and contextual information is, as of yet, not provided in any of the models.²⁷⁶

²⁷⁵ See, among others, Jones (2007); Fauconnier and Fromme (2003); Van Saaze (2009).

²⁷⁶ A method to capture different audience experiences was conducted by the research group during the Creator project (in which Blast Theory's project *Rider Spoke* was developed). The 'digital replay system' shows an interactive juxtaposition of materials generated by different communities over time. 'The system allows for new and unexpected discoveries as the work could be viewed through growing numbers of disciplinary lenses' (Giannachi et al. 2010). See also Benford and Giannacchi (2011), who offer a theoretical framework for understanding what they term *mixed reality performances*. In addition, they document a series of these performances (including Blast Theory's *Rider Spoke*) using their tool CloudPad, which documents individual user replay of an artwork.

In summary, it can be said that a multilevel approach is preferred in all documentation processes. Such a structure should emphasise the tension between the ‘ideal’ notion of the artwork (as a composite, theoretical idea constructed from artist statements, technical schemas, and the accumulation of many iterations) and ‘real’ audience and/or expert member experiences (curators, archivists, etc.) (Jones 2007). It can also be concluded that existing models are not ideal when dealing with technical specifications that are connected to the experiences of the work, which due to the often interactive nature of net art are important to understand. Existing models also fail to provide much information about experiences as such. But are these elements more visible in, or can they be extracted from, artists’ documentation?

4.4.1. *Uncle Roy All Around You* in a model

Uncle Roy All Around You is a participatory multiplayer, multilayered game that combines virtual and real world. As the title suggests, the participants’ surroundings play an important role. The conceptual idea, technical interface, game play and its locations are defined, but are all susceptible to change. With so many changing parameters it is no surprise that participants also experience the working of the GPS, WiFi, and interfaces in very different ways. As Benford notes:

Our study reveals the diverse ways in which online players experienced the uncertainties inherent in GPS and WiFi, including being mostly unaware of them, but sometimes seeing them as problems, or treating them as a designed feature of the game, and even occasionally exploiting them within gameplay (Benford et al. 2006a).

Such subtle differences are precisely what are not taken into account in the previously described models, and they are also hard to pinpoint in interviews.

Moreover, Blast Theory used these circumstances as tactical elements in the game by anticipating (but never knowing with certainty) when, for example, technical failures would occur or a response should be taken:

Throughout URAY, various tactics are used to blur the boundaries between the digital and the physical, and the fictional and the real, including implicating otherwise uninvolved members of the public via ambiguous text clues, using physical props and locations and live actors, all of which are set against a backdrop of conspiracy, isolation and surveillance that is deliberately engineered to create dramatic tension and question the boundaries of where the game ends and the everyday world begins (Benford et al. 2006b).

The (technical) failures were used to enhance the dramatic narrative of the story. This did not mean, however, that the actual occurrences were planned. Although the game play was carefully orchestrated, there were many moments of uncertainty that were hard to pin down. For example, a player on the street could lose the GPS signal. A member of Blast Theory, acting as a casual person, would then walk up to the player and explain that he noticed their hesitation before pointing her/him in

the right direction. Instead of discarding the limitations of the technology, the limitations became integral elements in the performativity of the work. As such, an error was seen as productive rather than as an obstacle to good function. In other words, the technical dependencies of the art form emphasised the meaning and experience of the work. There is no place for this ambiguity and uncertainty in models like CMCM or questionnaires like VMQ.²⁷⁷ This was apparent when I asked Blast Theory if the GPS interface system could be replaced in the future by another technology (one of the key questions in the VMQ).²⁷⁸ The answer was simply: yes.²⁷⁹ However, the discussions about their working process, their way of creating documents, and their attitude towards technology showed that the working of the technology, with its current failures and inherent uncertainties, had influenced both the concept and performativity of the work. As such, they were integral when experiencing the work. Thus, replacing the technology in the future may prove to be problematic at the experiential and conceptual levels of the work.

These examples show that for some specific yet integral information, the models as described do not suffice. One of the main problems is that the documentation models are often (with the exception of CMCM) extracted from earlier dominant discourses (paintings, sculpture) and mapped onto a marginalised one (net art, performance, games). Models are imposed according to the meaning reproduced through the end result, but do not emerge from the interactions of multiple agencies that created the experience.²⁸⁰ Projects like *Uncle Roy All Around You* especially needed a multi-layered approach that takes into account relations between objects in the construction and execution of the work. Insight into participants' interaction and experience are necessary, as well as insight into the conceptual, creative and working process from a technical, relational, and experiential perspective. These elements are all connected and only have meaning when seen in connection to each other. At the same time, they can change depending on the context. As such, the work is an assemblage and can be understood by approaching it from a media ecological perspective.²⁸¹ A documentation model framework for net art should therefore address the creative process and reflect the work's variability. It should also relate to the context and take into account the participants' experience. Moreover, these are not stable elements. Ideally, the structure and interface of the model should reflect such variability.

²⁷⁷ A solution might be to use HCI ethnographic methods that describe or evaluate features of a technological experience. Similar suggestions are made in game related conservation research (Dekker 2010:8.0 and Winget 2008b), as well as in contemporary dance documentation (see for example Inside Movement Knowledge mentioned below).

²⁷⁸ Matt Adams, interview Brighton, 5 February 2010.

²⁷⁹ Projects like Blast Theory are developed by different people (artists, developers and university research centres) with different scopes and aims. It could be that assessing aspects of the work that are critical for re-creation is dependent on who is asked.

²⁸⁰ This happens regularly in the museum context, even with more traditional artforms. For example, Van Saaze describes how a registrar is bound by the existing protocols of a registration system, leading to a situation where a work consisting of multiple works cannot be properly archived. They are either filed under one name (neglecting the individual works) or the different works are filed separately, denying their interrelationship (Van Saaze 2009:150-153).

²⁸¹ Van Saaze comes to a similar conclusion in her research into the work *No Ghost Just a Shell*. In analysing the work in term of a 'collective' (in reference to ANT), she argues that 'the contingent processes in which artworks are done (...) play a formative role in what the artwork is and what it can be made into' (2009:162). In this respect, Van Mastrigt (Dekker 2010:8.0) hints at the conservation of 'an ecosystem instead of an object'.

4.5. Developing a documentation model

I briefly revisit the process and outcome of the research project *Inside Movement Knowledge* to see in what way analyses of artists' documentation methods could be of help for conservation. *Inside Movement Knowledge* was a two-year (2008-10) collaborative, interdisciplinary research study into new methods for the documentation, transmission and preservation of contemporary choreographic and dance knowledge.²⁸² Together with Gaby Wijers and Vivian van Saaze, I tried to develop a documentation model for contemporary dance practices, more especially for the dance performance *Extra Dry* (1999) by EG|PC.²⁸³ Coming from different backgrounds, we combined experiences and knowledge of artists documentation practices, which included media art reconstruction, interview strategies, and museums documentation models. Although it is beyond the scope of this research to describe our decisions in depth, in the end what surfaced could be potentially relevant as a documentation model for net art.

The outset of the research was to create a documentation model for contemporary dance that would identify the following aspects: the creative process, definition of concepts, and focus on recurrences of performances instead of a finalised piece. Based on discussions with choreographers, dancers, teachers and researchers, we wanted the model to acknowledge the variability of a dynamic art form and the significance of interdisciplinary collaboration, and to have a focus on creative process rather than end product. We used interviews as a knowledge production tool, informed by methodology developed in contemporary art conservation.²⁸⁴ The documentation model was structured in two ways: information and categories. The information consisted of four layers: (1) information from interviews by the research team with core members of the group; (2) information from ICKamsterdam sources; (3) information from interviews with the choreographers, conducted by others; and (4) information from secondary literature. We structured the second part of the model into several categories based on the content of the information. The structure included context, work, staging/scenography, phases and parameters (which recorded moments of decision during the creative process and in reconstruction), and prerequisites for reconstruction. A written score with notations of movement and time framing, technical plans, cues, and a playlist were added as appendixes to the model.²⁸⁵ In retrospect, the development of the model was an active, interrogative tool for knowledge construction. The model created a situation in which different forms of knowledge could be discussed. In this sense, the model could be regarded as a tool that instigated communication or as a format that allowed for further discussion, encouragement and deepened mutual inquiries. As such, the model shared the features of a boundary object, as understood by Star and Griesemer (1989):

²⁸² For more information see <http://insidemovementknowledge.net>.

²⁸³ EG|PC (Emio Greco and Pieter C. Scholten) are the founding members of the International Choreographic Arts Centre Amsterdam (ICKamsterdam). See <http://www.ickamsterdam.com/>.

²⁸⁴ See also: Van Saaze (2010) on the use of artists interviews for contemporary art and dance and the handbook for artist interviews by Beerkens et al. (2012).

²⁸⁵ For a detailed overview and analyses see Wijers (2010) and Van Saaze and Dekker (2013).

objects which are both plastic enough to adapt to local needs and constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. They are weakly structured in common use, and become strongly structured in individual-site use. They may be abstract or concrete. They have different meanings in different social worlds but their structure is common enough to more than one world to make them recognizable means of translation. The creation and management of boundary objects is key in developing and maintaining coherence across intersecting social worlds.

From the outset, the model was designed for the purpose of reconstruction. However, during its development, our goal changed to documenting artistic reasoning and capturing the basic parameters of a work by defining what would or would not change, thereby stressing the variability of the work. Ultimately, our intention turned towards the creation of an online resource that would allow for flexible use of the model while mimicking the changes and variability of the work. In other words, the resource allowed a means of accessing different layers of information, preferably through semi-transparent layers simultaneously. This way, different things were visible to several people at the same time, while making their own connections. Preferably, it would have also been possible to add new information and save specific routes through the website. This was not possible due to time and money constraints, but a next step in the development of the model could be to design an interface for the structure linked with different software and embedded in a multi media environment so that it can function as an online layered tool that can be used and adapted by several users. Such a system would encourage foremostly dialogue and discussion.

The model, now embedded in ICKamsterdam, has been taken up for diverse usage: It was used in workshops on reconstruction to work with and learn the company's repertoire, and also to create something new from the information provided. The text materials – the kind of information that the model allows users to capture – is here used as a point of departure, providing contextual and conceptual information to other performers that mere video registrations would not offer. We tried to develop a model that could be used in different ways depending on the needs and interests of those using it. As such, it could be argued that the form of the model would depend not on the result of technical possibilities but could be seen as the outcome of social relations.²⁸⁶ In conclusion, the documentation model did serve multiple purposes, as explained by Bertha Bermúdez Pascual, dance researcher at ICKamsterdam,:

One is knowledge; to let people know the kind of experiential knowledge that is imbedded in dance. And for that we are developing different tools and communicating through different media. On the other side it is also interesting to “get rid” of your work and see what else can generate from it. What does this particular piece inspire you to do? And for that these documents are important because it allows that kind of communication.²⁸⁷

²⁸⁶ This suggestion is also made by anthropologist James Leach who argues that form is an extended set of relations depending on the information that is sent. For more information see Leach (2010).

²⁸⁷ Bertha Bermudez, interview ICKamsterdam, Amsterdam, 11 February 2012.

This statement reflects the variable nature of net art, turning its documentation model into a variable entity that can be shared, used and developed.

4.6. Looking into the future: *Uncle Roy* in a museum collection

Suzanne Briet stated, ‘the forms that documentary work assumes are as numerous as the needs from which they are born’ (2006:36). Coming to the end of this chapter, this statement is as strong as ever. It is important to know the meaning and value of documents and documentation, but it is just as important to know their relationship, the context, and, expanding on Briet, the process of their creation. Analysis of artists’ documentation methods and its comparison to information that is given or asked for in traditional museum documentation models showed that specific and inherent qualities of net artwork have not been taken into account until now. Closer analysis of Blast Theory’s creative processes indicated crucial information on details of the project and the experience it yielded, and most importantly the idiosyncratic behaviour of the technology and the influence this had on the performativity of the work. This might have gotten lost with standard questionnaires or by applying emulation methods. This means that although there is still a distinction between primary and secondary documents, this distinction should not be hierarchical.

It is clear that many net artworks are technically complex, not only in their final presentation but also in their production phase. For a re-creation of the work it is therefore important to understand the technical choices that were made at the time and in the context they were made (see also Enge and Lurk 2012; Winget 2008a). As such, it is important to recognise that knowledge and meaning is constituted *through* an object and is not solely held *within* the object (Clavir 2002). As shown in the previous chapter, this affirms the importance of media-archaeological and media ecological approaches when recreating a net artwork. Taking into account what I have termed *documentation as process* (documentation that reflects the decisions that are made while creating the work) yields a better understanding of the inherent qualities of the work. It is important to be aware of the decisions (and their consequences) that are made in the development of the work and to accurately describe or record them. Theoretically, it is possible to recreate complex net artworks like *Uncle Roy All Around You*, but the likelihood of this happening will increase when artists’ strategies are integrated into museum practices or when existing models give more attention to the creative process. But would it be possible for *Uncle Roy* to end up in a museum collection? This is, of course, a difficult question. Aside from the issue of money or artistic value, what would museum staff need to conserve the work? What are the possible implications for them to care for and recreate the work at any time in the future? Even more important: Would it be desirable, at all? Would not the documentation that is gathered, made, and collected communicate more about the work and how it is experienced than the physical manifestation of the work? Referring to documentation videos by Blast Theory, I argued for an expanded understanding of *documentation as presentation* (documentation that is made to explain or

communication the work). This treats video documentation not merely as a way to capture live events, but also as a form of dialogue, response, and reflection. Furthermore, when brought into new presentation contexts, documentation has the potential to deepen the conceptual idea in new ways, adding new layers to the work. In other words, documentation becomes a critical space in its own right, opening the prospect to expand on the original work.

It seems an obvious statement: Documentation might guide the decision-making process in conservation, but gaps or blind spots influence the work. In reality, the gaps and blind spots are very persistent, and only come into view during use (Adamczyk 2008). To make the most of the ‘cracks in the wall’, emphasis should go to the roles and responsibilities of conservators (who take care after the work is finished) and curators (who are often involved in creation and documentation processes). In this thesis, I argue that a first step would be to recognise the need for an extended conception of documentation, distinguishing different types of documentation, and phasing their role and function into the dynamic practice of net art. Whereas an increasing number of collaborative approaches are undertaken to develop documentation models, the practical implementation of the work often remains with individual conservators or curators. A more collaborative practice of knowledge production and documentation including artists, information scientists, and programmers may overcome this situation.²⁸⁸ This will also lead to a better understanding of the work and could potentially lead to opportunities for creating new versions, thus building, elaborating, and commenting on previous states. If this approach is followed, it not only opens new ways of thinking about what conservation means, but it could entice new ways of dealing with the structure and function of museums (Krämer 2007; Van Mastrigt 2009; Frieling 2014). In that case, a museum shifts from a custodian of ‘dead objects’ to a ‘living space’ where presentation, preservation, discussion, and active exploration go hand in hand. In the next chapter I focus on the work *Naked on Pluto* to see how such processes are taking place and in what ways they are consequently affecting conservation practices.

²⁸⁸ Similarly, Van Saaze (2009) and Irvin (2006) both stress the active role of museums within the process of information gathering and documenting.

5. The value of openness

The major characteristic of today's art is no longer the articulation of space but of human activity; the activity of the artist has become the dominant theme and content.

Harald Szeemann, *Live in Your Head. When Attitudes Become Form. Works – Concepts – Processes – Situations – Information* (1969).

In the above quote, curator Harald Szeemann described a 'new' group of artists who were less interested in making final objects and more interested in showing the artistic processes in an 'exhibition'.²⁸⁹ Their attitude determined the form of the work.²⁹⁰ In this chapter I focus on contemporary artists who also work according to a specific mentality (in this case following open source ideologies) while practicing art in ways that move beyond the object. The main focus is on the multiplayer game *Naked on Pluto*, a work that relies on the commercial and restricted online platform Facebook. This is a rather extreme case study, because there is still little analytical reflection on artworks that thrive on commercial social media platforms, let alone on the interest of museums in presentation or acquisition of these works. Despite this, I show that such a practice can be regarded as paradigmatic for many contemporary artworks, as well as historical artworks like the process art exemplified in Szeemann's exhibition. Building on the previous case studies, this chapter explores a way to understand open practices, in which process plays an important role. In particular, I will address the following challenge: What are the consequences of conserving open artworks? By this I mean, what challenges arise when a work, or parts of it, can be copied, used, presented and distributed freely and by everyone? While exploring the ideology of open source, I argue for a conservation practice that builds upon the idea of the 'processual', which stresses the value of distribution and development through which knowledge and practices survive.

5.1. The emergence of *Naked on Pluto*

Naked on Pluto (2010) was created by Dave Griffiths, Aymeric Mansoux and Marloes de Valk during a collaborative artist-in-residence between the Netherlands Media Art Institute (NIMk) in Amsterdam, the Netherlands, Baltan Laboratories in Eindhoven, the Netherlands and Pikel in Bergen, Norway.²⁹¹

²⁸⁹ In his catalogue text, Szeemann puts exhibition in quotes to emphasise its distinction from previous exhibition formats (Szeemann 1969:5). Wim Beeren, the curator of the exhibition *Op Losse Schroeven* presented concurrently at Stedelijk Museum in Amsterdam, made similar statements about the artworks. However, his emphasis was directed less towards attitude and more to 'change as a formative principle': the artworks disrupted static and seemingly coherent relationships and not necessarily the artists (Beeren 1969).

²⁹⁰ The exhibition history of this show is particularly interesting. Not only did it attract a lot of attention at the time, it is still referenced. During the 2013 Venice Biennial it was 'originally' restaged. For more information, see the extensively illustrated catalogue (Celant 2013). Also, *Op Losse Schroeven* was re-created several times. Although these restagings are very interesting and deserve more attention, the focus of this dissertation is not on exhibition histories. However, towards the end of this chapter I will return to the role of curators in recreating artworks. For a critical reflection on restaging exhibitions from the 1960s, see, for example, Fotiadi (2013). And for a comparison between the two exhibitions, see Rattemeyer (2010).

²⁹¹ Together with Annette Wolfsberger, I organised and curated the NIMk's artists residency programme from 2009-12. The main focal points of the three organisations were their previous experience with artist in residencies and the development of technical and computational artwork. *Naked on Pluto* was selected through an open call, which related to the exhibition and symposium *Funware* (curated by Olga Goriunova) for MU and Baltan Laboratories in Eindhoven. For more information about the event, see: <http://aaaan.net/funware/>. A thorough report on the collaboration can be read in Dekker et al. (2012).

The project was developed from June until November 2010, during which the artists worked from both their own studios and at the organisations' location. The latter was done in a 'sprint format', meaning that for an intense one week period the artists worked on specific problems and tested parts of the project with audiences, either as a presentation or a workshop. In the meantime, the artists would document the entire development process, from the project's conceptualisation to opening up the decision making process and making the software available for use by others. Through several discussions with the artists we tried to find a way to connect documentation with the artists practice.²⁹² In this particular case we focused on a blog for the research around the project and the online platform Gitorious for the documentation of the source code. After the first presentation the artists also made video documentation, which explained the work. I will return to these different forms in a short moment. By following the principle of 'open practices', and the intensive 'documentation as process', everyone involved can easily trace the development of the work. Throughout this chapter I will tune in to the working process of *Naked on Pluto*, then critically analyse in what ways their 'open practice' can be helpful for conservators, and museums in general.

5.2. *Naked on Pluto*

Naked on Pluto is a multiplayer text adventure that uses data available on Facebook.²⁹³ The project can be experienced in different ways: as an online game with a dedicated website, as an installation that presents certain components, as a research blog, or in video documentation and workshops. Similar to *mouchette.org*, *Naked on Pluto* is an assemblage of different projects that circle around a 'Plutonian identity'. Before moving into the function and the relations between the various elements of the work, I will first explain the concept behind the work, and more specifically the game.

The game was inspired by the role social networks play in feeding the explosive market for personal data.²⁹⁴ As De Valk explains:

The game questions the way social media shape our friendships and the way social relations have become a commodity through targeted advertising, based on the phenomenal quantities of information we supply these databases with, literally exposing ourselves (2011).

Data on the Internet is often collected, without people's awareness, through scrapers and trackers that easily, but often in non-transparent ways, follow, direct and extract information. This kind of

²⁹² From previous experience we learned that some artists are very skilled at describing their process in words, while others find it much easier to talk about it or show it through visual documentation (i.e. drawings, photos and videos). Instead of predefining a standard for the documentation we decided to focus on the unique structures and outcomes of each project. This way, at a later stage it would also be interesting to compare various strategies, and to possibly create a flexible documentation strategy with a particular focus on artist in residencies. See also Dekker et al. (2012).

²⁹³ The web address is: <http://naked-on-pluto.net>.

²⁹⁴ Many authors have reflected on this growth, either by emphasising the positive (through terms like 'wisdom of the masses', 'many minds' and 'produsage') or the negative side effects. To name two sides of the coin, first, the heralded and extremely positive book about the advantages of social media, *Here Comes Everybody: The Power of Organising Without Organisations* (2008) by Clay Shirky focuses mainly on the advantages of social media platforms for users, leaving aside the implications of copyright, privacy and ownership. On the other side of the coin, Felix Stadler clearly points at the important differences and 'growing tension between the dynamics on the front-end (where users interact) and on the back-end (where users have no access)' (2008)

invisibility obfuscates privacy settings. *Naked on Pluto* addresses the privacy underlying Facebook by exposing the nature and limits of the social network, while slowly pushing the boundaries of what is tolerated by the company. *Naked on Pluto* accomplishes this without violating Facebook's terms of service.²⁹⁵ The artists' extensive research into how users are exposed on social networks, how their data is used, and what having another life in a database means can be found on the research blog, alongside the various phases of *Naked on Pluto's* development. The game sits midway between old fashion text-based gaming and dystopian science fiction. Although it was not possible to play the game inside Facebook, the artists tried to mimic the aesthetic interfaces and corporate design formats as closely as possible, while still retaining their own Plutonian brand (Fig. 5.1). For example, real time information flow, divided into three columns, follows an almost generic communications interface similar to Facebook and Twitter. This resemblance is strengthened by the use of familiar faces and text from one's own Facebook page and its associated profiles.²⁹⁶ Moreover, as De Valk explains:

The design builds on the idea of overwhelming amounts of information, making it a challenge to find important information in a "tweet-like" aggregation of feeds that seems both familiar and confusing at the same time (De Valk 2011).

Once logged into the game, via one's Facebook name and password (Fig. 5.2), the user is immersed in a story about surviving in and exploring the entertainment capital of the Solar System: Elastic Versailles revision 14 (EVR14), a city on planet Pluto, resembles the Versailles in Paris. EVR14 runs as a corrupt artificial intelligence system. It was designed for the promotional parades of personal and ideological powers.²⁹⁷ Immediately after a successful log-in, the game uses the available information on one's Facebook account, and mixes everything indiscriminately with the landscape of EVR14. A player's personal data and that of her/his 'friends' become elements of a satirical, interactive fiction. *Naked on Pluto* can be seen as a caricature of the explosion of insidious online harvesting mechanisms that highlight the ambiguous character of social networks (personal intimacy versus 'friends' as quantifiable assets). The goal of the game is to escape.

5.2.1. The structure of the game

The structure, or architecture, of *Naked on Pluto* is built in the same way that traditional games are built: The player starts with a fixed path, which opens up into problems with less rigidly defined solutions.²⁹⁸ Although the game has no defined levels, the architecture consists of different spaces that can be entered – for example, the *DanceRoom*, the *PalaceCourtyard* or the *Casino* – provided that the player has collected the right objects or answered a question. The game starts with a prolific textual

²⁹⁵ For more information, see Waelder (2014). I will return to the issue of copyrights and the restrictions of Facebook in the next sections.

²⁹⁶ The colour blue, the background of the project, is also visually associated with digital and the Internet (Snodgrass 2014).

²⁹⁷ For more information see: <http://pi.kuri.mu/naked-on-pluto/>.

²⁹⁸ A detailed account of the structure of the game is beyond the scope of this research. Therefore in this section I will confine myself to a general description of the structure to explain the basic functioning of the game.

exchange between the player and the computer, in which bots (a computer programme that performs automated tasks) mix and muddle up data, faces, and profiles, generating a framework of strangely familiar relationships. The complexity of the exchange increases as the game progresses. This intricate use of exchanges relates to the specifics of sandbox games. Gaming is generally understood as ‘a type of play activity, conducted in the context of a pretended reality, in which the participant(s) try to achieve at least one arbitrary, nontrivial goal by acting in accordance with rules’ (Adams 2009:3).²⁹⁹ However, sandbox games are less goal-oriented and do not follow strict rule-sets. The term ‘sandbox’ refers more to the mechanics of play and how, as in a physical sand pit, the user is able to play creatively without specific goals. Other terms that are used are open-end games, non-linear games or freeform creative play (Adams 2009). Each of these names demonstrates that the player creates her/his own path in the game. With little plot development, complex situations emerge from the interaction of relatively simple game mechanics.

In the case of *Naked on Pluto*, the gameplay is facilitated by using bots, among other means.³⁰⁰ The bots help players get around in the game. They might also give information, but can get information from the player as well. Often disguised, their job is to make players feel comfortable. For example, the ‘red velvet chatterbot’, or ‘love-bot’, tries to make ‘visitors feel loved, attractive and confident’.³⁰¹ Love-bots are part of Elastic Versailles’ intricate way of entertaining visitors and putting them into the right mind set to share personal Facebook information freely with its agents and ‘soak up mountains of advertisements and spend coins like there’s no tomorrow’.³⁰² Next to receiving messages from bots, players are triggered by new and old information from people they know on Facebook. Players can free themselves from the ‘harassment’ of the bots only by resisting the temptation and waiting until their resources run out, or until the logic of the plot loses all sense.

As mentioned, the real time information flow is divided into columns, which can be followed simultaneously (Fig. 5.3). The *Mass Syndication* on the right shows communications that are happening on one’s Facebook account. The *Self Syndication*, or the middle column, keeps track of player actions in EVr14, and the *Targetted Syndication* on the left is a personal feed that displays messages directed at the player.³⁰³ Each action by a player, or from another person in the same location, is translated into a narrative element. Players get a constant overview of her/his options as well as those of the other players in the game (Figs. 5.3 – 5.6).

As stated, *Naked on Pluto* can be played with multiple people. Creative input can be shared with friends. In addition, players can contribute to the story by adding elements to the game, which can potentially lead to other games within the game. In other words, parts of the game world can be

²⁹⁹ In their publication *The Study of Games* (1971), Elliott M. Avedon and Brian Sutton-Smith already pointed out that games are defined differently depending on the background of the researcher. See also Salen and Zimmerman (2004) who examined several of these definitions.

³⁰⁰ One of these bots, the CleanerBot, can also be followed separately on Twitter: ‘I’m a cleaner in the post-convenience world of elastic versailles’: <http://twitter.com/#!/NopCleanerBot> (accessed May 2012).

³⁰¹ See blog entry *Naked on Pluto*: <http://pluto.kuri.mu/2010/08/26/bots-bots-bots/> (accessed May 2012).

³⁰² Ibid.

³⁰³ For more information, see the Help section *Naked on Pluto*, <http://evr14.naked-on-pluto.net/#Look%20in%20the%20Sky> (accessed May 2012).

explored, built upon and developed collaboratively. This ensures that players are not completely lost in the game or bored. But it also gives players a sense of appropriation and control over the game. Moreover, it resembles the collaborative approach discussed in the ‘Mouchette network’ in Chapter 3. There I argued that such a network could evolve into a ‘network of care’ that maintains or conserves parts of the work. However, as I will show, *Naked on Pluto* handles conservation issues differently. I will return to the specifics of this approach in a short while. First, to better comprehend and situate a potential future of *Naked on Pluto*, I will discuss the relation to Facebook and its (dis)connection to openness.

5.2.2. *Naked on Pluto* and Facebook

Facebook, the ‘freely’ accessible social networking service, started in February 2004.³⁰⁴ On its website it states that ‘Facebook’s mission is to give people the power to share and make the world more open and connected’.³⁰⁵ Facebook is owned and operated by Facebook Inc. Any person 13 years of age and older can register and use the site by providing Facebook with their name, date of birth and email address. After registering, users can create a personal profile to which they can add other users and post and exchange messages: publicly, privately or through a chat function (live voice calls). They can join ‘common interest user groups’ and categorise their Facebook friends into lists, such as ‘Close Friends’ or ‘People From Work’. There is limited possibility to design a page, but there are multiple applications that can be used to ‘personalise’ one’s profile page. Facebook’s message system is chronologically organised. Incoming messages arrive at the top of the page. The messages cannot be searched easily. To improve this, Facebook introduced Timeline in December 2011, making it easier to categorise posts, images and videos by provide a more intuitive and comprehensible way to navigate through the information. A user’s Timeline starts at their date of entry into Facebook and ends in the present. Users are able to decide and modify the period of time assigned to any of their content, as well as the audience or group(s) that are able to see each piece of information.³⁰⁶ The popularity of Facebook was still growing while *Naked on Pluto* was being developed.

The popularity of social networking sites began at the end of the 1990s. Since, several art projects have been developed that commented on the hype.³⁰⁷ Most of these projects ironically comment on the social or networking aspect of the new platforms. To name a few:³⁰⁸ *Sinister Social*

³⁰⁴ The ‘free’ means that it is free for users to update their profiles. In exchange for this free access users provide Facebook with their data, which Facebook can collect without permission.

³⁰⁵ <http://facebook.com> (accessed May 2012).

³⁰⁶ Timeline is an example of cultural automation, which Manovich (2001) names as one of the key trends in new media. In a Facebook post he commented that the introduction of Timeline represents another step towards the future of automatic algorithmic visual mass communication: ‘Exactly 50 years after Ivan Sutherland introduced automatic design operations in his Sketchpad, algorithmic design rules over social media’. (https://www.facebook.com/permalink.php?story_fbid=329936163736882&id=295694073827758, accessed 1 April 2012).

³⁰⁷ Social networking methods were developed by the end of the 1990s. They offered advanced features for users to find and manage friends. For a history of social networking sites and their development, see, for example, Boyd and Ellison (2007).

³⁰⁸ An interesting list of projects is shared on the repository *antisocial networking* (2008 - present). The selected projects explore the pseudo-agency of online social platforms and critique the social media canon. <http://www.antisocial-notworking.net>.

Network (2005)³⁰⁹ by Annina Rüst is a project that uses online chat bots and automatised scoundrels (artificially intelligent characters) to infiltrate chat networks that discuss seemingly common-place topics such as gardening or finances and the occasional criminally harmful topic. A social network diagram is drawn while the conversations are going on. The online conversations are mapped and interpreted then compared to a database to determine possible unfriendly uses some might have for the online social network. *MyFrienemies* (2007) by Angie Waller³¹⁰ is a networking site modelled after secret societies, where anonymous users are not able to browse other user profiles. Instead, they are connected to those who share a dislike of the same people. *El Friendo* (2008) by Govcom.org promotes a service that upgrades user profiles on MySpace.³¹¹ Other projects are more aggressive, like Cory Arcangel's *Live In Person* (2005) where he announced his intention to delete his account performatively and in public³¹²; *Seppukoo* (2009)³¹³ by Les Liens Invisible and *Web2.0 Suicide Machine* (2009) by moddr_lab. Whereas Arcangel's web site deactivates the user's Facebook account, the Web2.0 Suicide Machine executes real action and deletes all of the user's information, leaving 'zombie accounts'.³¹⁴ What most of these projects have in common is their persistent attitude towards social media platforms. They address or attack them from outside. Only a few explore these platforms from the inside, which is what makes *Naked on Pluto* especially interesting.

Like most of the examples above, the artists behind *Naked on Pluto* are concerned with certain aspects of social networking sites, in particular online privacy issues. Although it is not the goal of the game to resolve any of these issues, by addressing often unseen tactics, the artists seek to make the back-end more tangible. As mentioned, this happens by making profile content and connected user data visible by using it in a different context (Fig. 5.5). The game uses the 'Facebook Connect' application (a freely available service from Facebook)³¹⁵ and asks players for permission to access the following information (Plohman 2011:240):

- Basic information: name, profile picture, gender, networks, user ID, list of friends, and any other information that is shared with others;
- Profile information: likes, music, TV, movies, books, quotes, 'about me' details, activities, interests, groups, events, notes, birthday, home town, current city, website, religious and political views, education history, work history and Facebook status;
- Photos and videos: photos uploaded, videos uploaded and photos and videos of the user;

³⁰⁹ This project is no longer available online. Documentation can be found on: <http://www.anninaruest.com/a/sinister-network> (accessed May 2012).

³¹⁰ <http://www.myfrienemies.com/> (accessed May 2012).

³¹¹ <http://www.elfriendo.com/> (accessed May 2012).

³¹² These suicide notes and performances are not uncommon (see also mouchette.org), and can be traced in various forms and for various formats. For an extensive analysis, see Cox (2012).

³¹³ Seppukoo has been offline since February 2011 'due to the paradoxical controversy between the giant Facebook and Seppukoo, our suicidal services are now useless'. Documentation of the project and the virtual memorial pages can be found on <http://www.seppukoo.com> (accessed May 2012).

³¹⁴ It is effectively not possible to delete an account, because Facebook does not delete any data on its servers. Therefore, the Suicide Machine dismantles an account by changing the password, removing friends, groups and wall posts, hence the term 'zombie account'. By following this deletion it is hoped that data will in time be cached out from backup servers. For more information: <http://suicidemachine.org> (accessed May 2012).

³¹⁵ Facebook Connect launched in December 2008 and is a set of APIs from Facebook that enable Facebook members to log onto third-party websites, applications, mobile devices and gaming systems with their Facebook identity. While logged in, users can connect with friends via these media and post information and updates to their Facebook profiles. Developers can use these services to help their users connect and share with their Facebook friends on and off of Facebook and increase engagement for their website or application. (http://en.wikipedia.org/wiki/Facebook_connect#Facebook_Connect, accessed May 2012).

- Friends' information: birthdays, religious and political views, home towns, current cities, likes, music, TV, movies, books, quotes, activities, interests, education history, work history, groups, events, notes, photos, videos, photos and video of them, 'about me' details and Facebook statuses;
- Posts in a user's news feed.

Although Facebook is known to be diffuse in its privacy terms,³¹⁶ there are many ways to 'safeguard' information on a profile page by making sure data can only be viewed with permission. When the artists developed *Naked on Pluto*, Facebook did not guarantee that only authorised persons could view information.³¹⁷ As the artists discovered, it was rather easy to create an application to access non-public data (Plohman 2011:239). Maybe not surprisingly, the artists also noticed that during presentations of *Naked on Pluto*, both in the test workshops as well as in exhibitions, audience members were often reluctant to immediately sign in with their Facebook account, even though the handling of the user's data was made explicit before the start of the game (Fig. 5.9).

There were several reasons to choose Facebook as a platform instead of other social networking sites. Foremost, it was used because of its size and reach. With millions of active users worldwide, Facebook has become the most popular social networking service. At the same time, Facebook has also fuelled discussions about online privacy with its dubious policy changes, data leaks, and discrepancies between the way it markets itself as open and self-regulatory and how it actually functions as a multi-billion-dollar business that answers to its investors (Olsthoorn 2012). Another appealing and practical aspect of using the platform is that Facebook makes it easy and possible for anyone to access their user information, without checking by whom or why. This is possible with the so-called 'Facebook application'. The application does not run on the Facebook platform and is outside of Facebook's control, but it authorises access to user's data (De Valk 2011). *Naked on Pluto* uses the availability and manifestations of commercial applications to question the inner workings. It is through infiltration that the workings of the system(s) are exposed. This is also one of the reasons why the artists do not want to violate Facebook's regulations, because that would mean the end of the game and effectively halt their efforts to make the system more visible from within.

In Chapter 3, on Martine Neddham's *mouchette.org* I concluded with the statement that net art can be technically restored, and thus made accessible through conservation strategies, however (un)desirable they might be. However, what happens when a restricted commercial platform that is not

³¹⁶ Dutch media journalist Peter Olsthoorn published *De Macht van Facebook* (2012) [translation: The Power of Facebook]. It describes Facebook's innovative force as well as its excesses, making the book one of the first thorough analysis of Facebook. In his dissertation, Marc Stumpel clearly shows the strategies Facebook uses to circumvent its own privacy terms: http://marcstumpel.files.wordpress.com/2010/09/stumpel_ma_thesis_the-politics-of-social-media_facebook_control-and-resistance.pdf (accessed May 2012). Such diffuse strategies are particularly easy to obscure through interfaces, because complex interactions are not always easy to decipher or track. This is one of the reasons why Langlois et.al (2009) insist on a so-called 'code politics' approach to critically examine user-generated content in relation to software of Web2.0 commercial businesses. Such an approach, 'seeks to understand the connections that enable and shape the traffic and trafficking of information, data, immaterial labour and subjectivities online'.

³¹⁷ In February 2011, the Facebook Privacy Policy page stated: 'We cannot guarantee that only authorised persons will view your information. We cannot ensure that information you share on Facebook will not become publicly available. We are not responsible for third party circumvention of any privacy settings or security measures on Facebook'. In the revision of the 'data use policy' on 23 September 2011 this exact remark is removed and Facebook does not guarantee anything anymore.

easily accessible is used, particularly when its regulations and terms continually change? If it were up to the artists, it would be possible. As mentioned, they document their entire process. All steps of *Naked on Pluto*'s development are freely available. However, at this moment, it is not possible to gain access to Facebook's source code to ensure that that part of the game will function correctly. When working within a closed environment one always has to deal with technical problems that cannot be controlled. Changes to the Facebook API might change data feeds, and in the worst case could lead to the break down of the game or the disappearance of data. For example, the bots that rely on data from your Facebook friends might not have access to the same data anymore, which affects the content and goal of the work since it loses the connection. For conservators, this is of course a problem that is hard to overcome. However, this is not the concern of the artists. As they see it, *Naked on Pluto* is a specific comment on Facebook and the state of social media at the time. The game loses all meaning when that context changes.³¹⁸ As Marloes de Valk remarks: 'Probably in five years time people will not get the work anyway because there will be different issues that are important'.³¹⁹ Concerning future presentations, the artists emphasise the organisation of workshops with the game-engine instead of keeping the game technically alive. They also write about and add contextual information to the documentation of *Naked on Pluto*. In Chapter 6 I will return to an analysis of the function and meaning of the game-engine in more detail. For now, it is important to note that this attitude signals the processual part of *Naked on Pluto* and, as I will argue in the upcoming sections, ensures its longevity (albeit in different forms). In the next section I describe open source strategies and analyse how these are used in *Naked on Pluto*, while showing how this way of working affects and benefits conservation. While exploring the value of openness, I argue for a practice that departs from the idea of the processual by stressing the significance and need for acknowledgement of distributed networks through which knowledge and practices survive.

5.3. Open versus proprietary systems

In Chapter 3 I explained the difference between software and code – code being written instructions by a programmer in a computer programming language that is converted into machine language. This process of 'compiling' is at the core of open source practices. In other words, open source is used as an engineering principle in which the software, code, instructions and/or tools on how to work the code are open for anyone to use, change or distribute. In the last decade, the use of 'open concepts' has exploded to the point where the meaning of the word 'open' can vary greatly.³²⁰ It goes beyond this

³¹⁸ Social media is a very broad term and can encompass many perspectives: 'user-generated-content', 'convergence culture' (Henry Jenkins 2006), 'peer-production' (Yochai Benkler 2006) and 'Web2.0' (Tim O'Reilly 2005), to name a few. In all, it signifies a trend that started in the first decade of the Twenty-first century to address and describe the blurring lines of production and distribution between traditional media producers and consumers.

³¹⁹ Marloes de Valk, interview Hoorn, 31 October 2012.

³²⁰ The amount of information on the meaning and use of open source is overwhelming. See, among many others, Kelty (2008) on the history and cultural significance of Free Software. For some outstanding publications regarding the use of open concepts in art, see the edited volume by Mansoux and De Valk (2008), Ippolito (2002a) on why art must be free (as in free speech). It describes practical ways to make this happen, and Mansoux (2015), in which he analyses the creative misunderstandings between art, politics and the law within free culture.

research to go into the history and different voices that surround open source in more detail, but one of the main challenges concerns the ideology that underlies the definition of ‘open’.

From 1950s until the early 70s, those who used software also wrote it and exchanged it freely with their colleagues. Computer science academics and corporate researchers worked in collaboration, albeit out of necessity, to easily fix bugs or add new functionalities. From the 70s and 80s companies started to put restrictions on the use of software through copyright laws.³²¹ Since 1983, the free software movement has campaigned to regain the rights of free use and sharing for computer users. The movement launched the first GNU free operating system in 1984.³²² The initial intentions were to standardise a way of working, mostly to facilitate sharing and to improve knowledge.³²³ But in 1998, part of the community splintered off into the ‘open source’ movement. Although the function of the software did not change, the meaning – in an ethical and political sense – did. As Richard Stallman describes poignantly: ‘Open source is a development methodology; free software is a social movement’ (2010[2002]:84). To circumvent the dispute, Rishab Aiyer Ghosh coined the term FLOSS, Free/Libre Open Source Software in 2001, emphasising the essential value of the terms ‘free’ (as in gratis) and ‘libre’ (meaning with few or no restrictions). In this dissertation I use the term open source, out of practical reasons (since it is not the core of my research question), but also because the notion of ‘free’ and ‘freedom’ are in and of themselves problematic and not easily solved terms.³²⁴ Furthermore, the challenge regarding ‘open’ in relation to conservation practices concerns both open source and free software practices. Nevertheless, when dealing with ‘open’ practices it is extremely important to be aware of these subtle, but important (even emotional) differences. So, how is ‘open’ used in *Naked on Pluto*? What makes it possible, and what are the challenges in relation to conservation?

Naked on Pluto is developed in Free/Libre Open Source Software (FLOSS), and made available under a GNU Affero General Public License (AGPLv3).³²⁵ All of the software is documented on Gitorious, a free and open source web service for managing, sharing, and viewing git repositories (the data structures). Gitorious is a way of archiving code and it is also available as an installable web application so that third parties can use the interface in their own installations.³²⁶ Other

³²¹ See among others Weber (2004:20-53) and Kelty (2008).

³²² GNU is a recursive acronym for ‘GNU’s Not Unix’ (Unix was an operating system based on certain restrictions). It was also chosen because it is a real word (referring to the wildebeest) and because it sounded nice. For more information, see: <http://www.gnu.org/gnu/gnu-history.en.html>. For a detailed analysis of Unix and the need for other (free) operating system, see Kelty (2008:118-42). Due to delays of the kernel, it lasted until 1992 before the first free operating system was a reality (Linus Torvald changed the license into the GNU General Public License). For more information, see Mansoux and De Valk (2008:6-13); Stallman (2010[2002]:83-8).

³²³ In computing, standardisation was especially necessary to enable software to move between different machines. In this sense, it could be said that this exertion for standardisation is similar to the goals and needs of natural history museums in the nineteenth century (see chapter 3.2). However in many practices, standardisation, or stabilisation, is used to turn a project into a fixed or regulatory product or object to fit other systems in which ideas and ownership are not debatable (Kelty (2008:131). In the following I show how stability can also unfold in ways that foster process and variability.

³²⁴ In his dissertation, Mansoux (2015) analyses and reflects upon the plurality of, sometimes overlapping, sometimes contradicting, ideological and ethical interpretations of free culture practices.

³²⁵ This copyleft license is aimed towards server side applications and they specifically choose it to highlight and contrast the closed nature of Facebook’s source code (Waelder 2014). For more information about this specific license, see <http://www.gnu.org/licenses/agpl-3.0.html>.

³²⁶ This is one of the main differences from GitHub, another popular online web service with similar features that appeared around the same time (both 2008). Another difference is that GitHub consists of mostly convenience features, while Gitorious focuses on community-based features, which helps build a community around a project.

features of Gitorious are the ability to host/clone repositories, view changes, and leave comments. Using Gitorious allowed each of the artists to work independently, experiment within their clone, and push the changes to the main repository once they were ready (Plohman 2011:240).³²⁷ In short, anyone, including museum staff, can use the material on the git repository as they see fit. A downside of open source is that (external) expertise might be required in order to understand and use the software.³²⁸ A related challenge (as discussed in the previous chapter) is that it can be hard to decipher and is not always properly documented or annotated, making it difficult to understand why choices were made.³²⁹ As such, the learning curve of open source can be an obstacle, especially for those not familiar with the practice and ideology. This is a problem underlying many open practices (a.o. Mansoux and De Valk 2008). It is not easy to learn a completely new system, especially one that is often tweaked or changed to the point where multiple versions can consequently lead to compatibility problems. As Mansoux and De Valk explain, this is because, unlike many proprietary systems, open systems approach their users differently: ‘Its design is based on the assumption that users are capable of learning to master the system, instead of the assumptions that users are helpless’ (2008:11).

However, these challenges do not necessarily pose problems for conservators. For one, as open source code allows access, it increases possibilities for maintenance that can keep the work operational. Furthermore, the challenges posed by learning to programme or use open source software is countered by a lively community of users and developers that are active in helping others with their problems via mailing lists, forums and IRC (Internet Relay Chat) channels. Another reason why open source sometimes poses problems is its incompatibility with some proprietary hard- or software systems.³³⁰ However, this is also a problem with many proprietary hard- and software. In addition, most proprietary systems use the concept of planned obsolescence, which means that a piece of software or technology has a limited build-in life span (Bulow 1986). Moreover, whereas the incompatibility in open source practices encourages out of the box thinking, i.e. looking for other possibilities when something is not working, the freedom of choice in many proprietary systems quickly comes to a halt when technology stops functioning, or worse, companies stop doing business. Without access to source codes, a programme cannot be developed further or adjusted to new needs. In conclusion, the use of open source strategies makes it easier for conservators to access the work, and thus maintain or recreate it.

However, one of the main parts of *Naked on Pluto* is not documented on Gitorious: the platform that the game works with, i.e. the data in and of Facebook. This means that if Facebook

³²⁷ This way of working also allowed the organisations to follow the development.

³²⁸ This is also true for the reading and understanding of the structure of Gitorious, which is not always apparent to an outsider.

³²⁹ There are of course exceptions. For example, the 3D software Blender follows a very consistent documentation history and archive for every project, where it is easy to find and track developments. This is foremost due to the specificity of software (focused solely on 3D design), a devoted community and the dedicated attention of the organisation. For more information, see: <http://www.blender.org/>.

³³⁰ Another blind spot in open source is licensing, i.e. intellectual property. This has led to the writing of novel, unconventional copyright licenses. *Naked on Pluto* is licensed as Copyleft, which gives others the freedom to run, copy, distribute, study, change and improve the work, and requires all modified versions of a work to grant the same rights (<http://www.gnu.org/copyleft>). For more information about the discussions on open licenses in relation to the civil law tradition of moral rights, see Vetter (2004). Coleman (2013) describes in detail how a cultural critique of intellectual property rights arises; and Mansoux (2014) analyses the creative misunderstandings between art, politics and the law within free culture.

closes or changes its APIs the game is useless since there is no more input data. A solution to this challenge can be found by looking at the function of open source, in particular as it is used in *Naked on Pluto*. The distribution and potential for re-use allows for different processes to happen.

5.4. Openness and process

At the beginning of this chapter I stated that *Naked on Pluto* is paradigmatic of contemporary artworks, in which processes and objects are handled in ways that move beyond the object. But what does this mean? In Chapter 1 I described process as one of the characteristics of net art, signifying the creation or development of the work, which may or may not lead to a specific outcome. Secondly, I explained how processes are formal and contingent at the same time, meaning that they can be seen as expressive actants that function through systems, designs and histories. Processes are influenced by and executed through other processes and/or users. I will return to the latter in more detail in the next chapter, where I will also analyse the ‘act’ of code and software. To stick with the subject of this chapter I will relate the former description of process to open source strategies by emphasising that an artwork may continue to evolve in different ways once exhibited.

The idea of process in art, process as paradigm, is not new in art history. Process art originated as a movement in art that can be traced to the mid 1960s to 1970s. Harald Szeemann refers to this moment in his quote at the beginning of this chapter. In short, for artists like Eva Hesse, Robert Smithson and Robert Morris, concepts of change and transience are important elements, which they explored through an interest in the properties of the materials they used.³³¹ Processes were set in motion by the artists and over time (un)expected results would show themselves. Such a concern with the material was also a means to encourage reflection upon the ‘containers’, i.e. the gallery and museum space, which gave form to the material, and consequentially the work.³³² Although artists debate ways to best achieve their goals, inside and outside of institutional walls, they agree that process art is about the making of a work of art as subject and content in its own right and not about a final object.³³³ As such, the processual in process art is concerned with the actual *doing* and creating of art, and how these actions could be defined as the actual work of art. However, once presented, most artworks are quickly commodified by the art market, in museum collections or by artists themselves.³³⁴ Exemplary in this respect is the restaging in 2013 of *When Attitude Becomes Form*, mentioned at the beginning of this chapter during the Venice Biennial at Fondazione Prada. In the

³³¹ Process art was also a movement against the hyper-formalism of Minimalism, turning the Minimalist object into anti-form. This is made especially explicit by Robert Morris in his article ‘Notes on Sculpture 4: Beyond Objects’ (1969).

³³² For more information see Harrison and Wood (2003:813-5).

³³³ For example, whereas Morris’ work was situated within the confines of museum and gallery spaces, other artists wanted to completely escape these cultural confinements. Most notably, Allan Kaprow (1996[1968]) and Robert Smithson (1972) declared their disappointment with process art that was happening in galleries. Their goal was to problematise the artworld and its formative conditions.

³³⁴ For example, Margriet Schavemaker, head of collection and research at Stedelijk Museum in Amsterdam, mentioned that many artworks that were shown in the exhibition *Op Losse Schroeven* by Wim Beeren were immediately acquired for the collection, and that these artworks even became important parameters for future acquisitions. Entering the museum’s collection also meant that they were quickly ‘frozen in time’, conserved in an arbitrary selected state (personal conversation 30 April 2014). See also Ferriani and Pugliese (2013:59-60).

accompanying catalogue the curators and architect responsible for the restaging emphasise the importance of the exactness of the works and the exhibition setting. Although they recognise the importance of audience involvement by stressing their experience with the actual space and three-dimensional works, they choose to focus on the exhibition process rather than the processual character of the artworks (Celant 2013:389-421).³³⁵

Processuality in process art is mostly defined and confined by material qualities (e.g. its deterioration over time) or the ephemerality of performances and happenings. Although some of these qualities can also be seen in the processuality of software and code as I will show in the next chapter, many net art projects are processual through social interactions, which is closely connected to open source ideologies, particularly the insistence on re-use and distribution. To comprehend what this means, it is important to consider the function of the other components of *Naked on Pluto* besides the game, such as the installation, the blog and the workshop. As already mentioned, the blog and the workshop are documentation tools for the artist to inform people about the underlying strategies and methods of online social platforms. Although the content of both formats change over time, including many social interactions, this is foremost a one-directional process from the artists to the audience. The type of processuality I am interested in, and which I think is particularly interesting for conservation, is what takes place through presentations, particularly in the sense of ‘versioning’. Versioning can be seen in relation to variability, which I described in the previous chapters as something that changes over time. However, these changes are closely connected to material change (Ippolito 2008; Noël de Tilly 2009). With the term versioning, rather than emphasising its material change, I want to address the work as a social project.³³⁶

Naked on Pluto was presented several times and in various ways. The first presentation was part of the exhibition *Funware* at MU, the same show in which JODI’s *Jet Set Willy FOREVER* was presented. The artists wanted to create an installation that would show the context of *Naked on Pluto*, including selected parts from the interviews, which they conducted with several stakeholders about privacy on social networks, particularly Facebook. The installation included a research blog, the game for visitors to play either on a projector or computer screen, and an introduction video explaining the work.³³⁷ In the end, *Naked on Pluto* was presented on only two computer monitors due to lack of time and the restrictions of the overall exhibition design (Fig. 5.10). One screen showed the research blog on a block made from styrofoam. Visitors could experience the game on the other. Scattered

³³⁵ Important to note is that not all the artists in the exhibition decided to take part in the restaging. It goes beyond the aims of this chapter to describe and analyse these motives. For more information, see for example Esche (2013), and an interview with one of the curators of the restaging <http://www.internimagazine.com/news/special-features-1/when-attitudes-become-forms>.

³³⁶ This may be read in relation to Nicolas Bourriaud’s ‘relational aesthetics’ (2002[1988]), in which he shifts the status of the art object from a self-contained aesthetic to a socially relational model or field. However, and although he references computational metaphors and strategies, artworks that actually use such systems are deliberately missing from his analysis. This is not necessarily problematic. More problematic is that he does not describe the types of relations that are created, for whom or why. Moreover, his analysis considers these relations primarily as tools by which artworks are produced. This is contrary to my analysis, in which I emphasise the interrelations between different components or systems. The relations are the subjects of this research. From the ‘processual’ point of view, it is closer to Jack Burnham’s ‘systems aesthetics’ (1968), but whereas Burnham was foremost interested in purely machinic relations, kinetic and cybernetic arts, my focus includes non-machinic relations also. For a critical analysis of Bourriaud’s relational aesthetics in the context of media art, see for example Shanken (2011) who also discusses Burnham’s ideas in this context.

³³⁷ The artists provided me, as the co-producer of the exhibition, with this information (personal e-mail, November 2010).

throughout the room were round stickers with the *Naked on Pluto* logo and Internet address (Fig. 5.11). In the same year, it was presented as part of FILE2011 festival in São Paulo. Because it was part of a series of net artworks shown on computers, the artists decided to create a newspaper-style front page (Fig. 5.12) that showed reports by SpyBots, ReporterBots and InterviewBots from inside the game. The idea was that if people were resistant to logging-in on a public computer, they would still be able to see news from the game world. A year later, after *Naked on Pluto* had won the VIDA13.2 prize,³³⁸ the artists decided to build a new installation (Fig. 5.13). This time they focused less on the overall documentation of the project and more on specific aspects of the game, or what they referred to as the core of the game.

The installation is a “zoom” inside a specific part of the game and reveals information that the players do not have access to when they play. In a way, it is the other side of the mirror, the control room of the wizard of Oz. More particularly a room that has a key role in the story: the library. The library is the final room where the players must find a way to access to, it is the central point of Elastic Versailles, where everything is tracked, recorded and controlled. It is the ultimate metaphor for Facebook’s databases and surveillance systems.³³⁹

The installation moved beyond the online game by focusing on specific parts of the game that users would never be able to reach. This type of versioning moves beyond variability. The installations do not change solely in relation to location or equipment, as would be the case with variability. Each exhibition presents a specific aspect of the work, making each presentation unique.³⁴⁰ The social interactions are less visible in the installations. These take place during the presentations and workshops with the game-engine, the core of *Naked on Pluto*. This is where the artists re-use and make available the software-framework of the game. What this example also signifies is that versioning only becomes evident through multiplicity, enumeration and evolvment. In other words, the significance of the work does not revolve around one presentation. I will return to the implications of this statement for conservation in a short while. First, I will describe two other works that exemplify the different modes versioning can take.

The strategy of versioning is clearly visible, especially with a new generation of artworks that were made in the late 2000s. These artworks by often-called ‘digital natives’ reflect a kind of ‘automatic Internet state of mind’ that is often referred to as the ‘post-Internet era’ (Olson 2008). Exemplary is the work *19:30* (2010) by Aleksandra Domanovic.³⁴¹ Domanovic grew up in Serbia, which at the time was still part of Yugoslavia. Surprisingly, the strict regime that controlled the country gave a lot of creative freedom to its national television stations, which resulted in stable and high-quality entertainment and information programmes. The evening news was watched by many and

³³⁸ VIDA is an annual international contest for artistic research on artificial life. For more information: http://www.fundacion.telefonica.com/en/que_hacemos/noticias/detalle/24_10_2011_esp_1886 (accessed May 2012).

³³⁹ Personal e-mail from Aymeric Mansoux, 4 November 2011. For more information, see also Waelder (2014).

³⁴⁰ Since the installation is still being shown, it remains to be seen how its exhibition history develops. However, the artists insist that there is no one ‘right’ presentation (personal notes from the working conference *Collecting and Presenting Born-Digital Art. A matter of translation and (historical) knowledge*, which I organised in collaboration with Baltan Laboratories and Van Abbemuseum, 12-5 December 2012).

³⁴¹ For more information about the work, see <http://nineteenthirty.net>.

broadcast every evening at 19:30 (hence the title of Domanovic's work). When ethnic tensions intensified in the late 1980s, it became the focal point of the day. Watching the news was part of a routine and a shared experience, which contributed to the omnipresent memory of the musical and graphic intros of the news. Although the fall of Yugoslavia marked the end of this collective memory, it was music in the mid 1990s, and in particular raves, that created a new shared memory. For a large group of people, raves provided a sense of belonging to a community. In 2009, Domanovic returned to Serbia in an attempt to connect these different time periods and stress the importance of collective memory. By tracing the early news intros, Domanovic learned that many well-known composers had worked on the experimental scores. She uploaded her assembled archive and encouraged DJs to use them in their music tracks. In the gallery, the work is presented as an audio-visual installation consisting of two screens: one screen shows documentation of techno parties and the DJs using the tracks and the other shows the compilation of news jingles. The research and documentation of the events can be viewed online, where the old jingles and new tracks can also be heard and downloaded.

Old memories are triggered through the process of creating different versions that are (potentially) continuously distributed. At the same time, it should be asked whether the video installation is the work, or if the video is just documentation of something that happened (and perhaps continues) elsewhere? For an exhibition in 2011, Domanovic further abstracts the memories by adding stacks of paper with fragments of images from raves printed on the sides (Fig. 5.14). Although the stacks of paper, the video installation and the website can be presented separately, for a 'true' understanding of the work it is important to see the connections between the different parts. One way to more easily grasp these links is to move beyond conventional art aesthetics and concentrate on network aesthetics, as I outlined in Chapter 1. Instead of the material promise of a medium, or its substantial form, such aesthetics should be seen as 'a method and a force that, through rules, constraints, and capacities for expression, continually re-negotiates its own structures and existence' (Fazi and Fuller 2014). In other words, an aesthetic derived from aesthetics of the design of networks and distribution.

Another example that reinforces the practice of versioning is Constant Dullaart's work *You Tube as a Sculpture* (2009). The work is based on his previous work *You Tube as a Subject* (2008), a series of animated videos with the YouTube play button as its subject (Fig. 5.15). Positioned against the black background of a loading YouTube video, the play button image starts trembling as if suddenly in an earthquake, bouncing from side to side, changing colours, strobing like a mini disco lightshow, and falling down off the screen. Lastly, the image slowly blurs. Within the spirit of comment culture that was prominent with 'surf clubs',³⁴² Ben Coonley was one of the first to respond

³⁴² Surf clubs can be seen as the early twenty-first century's answer to the rise of the Web2.0 (Troemel 2011:38-39; and Olson 2008). Whereas an earlier Internet generation communicated mainly through mailing lists, the 'digital natives' set up their own clubs. This new generation of artists tries to define and maintain a shared aesthetic and a group identity and uses devices such as continuous postings, real-time involvement and commenting. They use existing social network platforms, such as YouTube, Flickr or Facebook, or create their own websites which often mimic blog structures, for the latter see, for instance, Nast Nets, Supercentral and Loshadka. It can be argued that the changing function of the Internet caused a decline of interest in software as medium. Today the Web2.0 and its social structure has become

with a series of videos that featured the dots that signal loading time as his subject (Fig. 5.15). In 2009, I co-curated the exhibition *Versions* at the Netherlands Media Art Institute in Amsterdam. We asked Dullaart to translate his work to the physical space.³⁴³ He decided to version the online discussion by creating a physical copy of the loading dots, *You Tube as a Sculpture*. This time, eight styrofoam balls were hung in a circle against a black background, lit one after the other by eight spotlights and a simple disco light mixer (Fig. 5.16). While the visitors were given the feeling of entering a loading You Tube video, they started filming the balls and uploaded them again to YouTube, ‘thereby completing the circle of production and reproduction’, as Dullaart mentions (Thalmaier 2011). The dialogue first occurred online, then offline and returned again to the virtual, where yet again new versions of ‘loading balls’ videos were made. The process continues. According to Dullaart:

The success of the sculpture meant that audience members documented the sculpture and finally became the uploading medium for my participation in the visual discussion set in motion by *You Tube as a Subject* a few years earlier (Thalmaier 2011).

The idea of making Internet processes material can be seen as a means of grasping a complex and continually changing world that shows its fragility and fleeting nature. It can be argued that, by creating physical objects, artists are attempting to transform the processual into a ‘poetic’ time freeze. However, this neglects the notion that these artworks arise from collective processes situated in continuum with other works, references and commentaries.³⁴⁴ Similar to *Naked on Pluto*, these assemblages are characterised by the processes of distribution and re-use of concepts and ideas. This is an important issue for conservation, as it may have many consequences for the perception of the artwork (and consequently, to the economic value of the work).³⁴⁵ Conservation thus faces two challenges: First, in what way can conservation work within the confines of a restricted system? And second, what are the consequences of dealing with such a process, where parts can be copied, used, presented and distributed freely and by everyone?³⁴⁶

To briefly summarise, versioning through presentations makes it difficult to determine what the work is. In the previous case study, *mouchette.org*, I said that the work *acted as* an assemblage of relations that merged to form a variable entity because of the different projects and events that are still

commonplace. Next to providing information its main goal is to shape consumer behaviour, the social has moved the technology into the background. Not surprisingly, artists are also more concerned with the social web phenomenon; as a structure, a concept as well as a practice to form relationships.

³⁴³ The other curators were Petra Heck and Constant Dullaart. We invited a number of artists, for whom online reaction from one person to another influenced their work process. We challenged them to temporarily exchange the Internet for the static space of the gallery. Questions about the significance of appropriation, authenticity and agency in the era of ‘comment culture’ ran like a thread through the exhibition. <http://nimk.nl/eng/versions> and http://aaan.net/hub/annetd/exhibitionsprojects_independent/.

³⁴⁴ For more information about these processes on social platforms, see Burgess who described these videos as ‘carriers for ideas’ that relate to ‘a “copy the instructions”, rather than “copy the product” model of replication and variation’ (2008:108).

³⁴⁵ See, for instance, Velthuis (2005) who writes about how contemporary art prices are determined, taking into account financial and symbolic meanings of art. Or Thornton’s (2008) ethnography of the contemporary art world and the art market in particular.

³⁴⁶ Some solutions may be found in the conservation of games. The challenges of the conservation of gaming have attracted some attention among scholars and researchers. See, for example, Kirschenbaum et al. (2009); Winget (2008b); and Lurk et al. (2012). The former two focus specifically on approaches to emulation that are developed in digital communities that enrich the object centered method of institutions with additional layers of information, from anecdotal narratives to contextual descriptions. Lurk et al. (2012) focuses on (mass) content preservation through emulation instead of selection of discrete aspects. However, there are no case studies yet of the conservation of processes.

closely connected to *mouchette.org*. This is not the case with versioning. Although it can be argued that the projects have a conceptual line of thinking in common, it is likely that the parts move into new directions that are not necessarily regarded as connected anymore. Versioning signals a recombination, in which parts of the work can disappear in a short amount of time. Whereas the notion of incompleteness is not new and is reminiscent of conceptual art,³⁴⁷ the way material is compiled, found, changed, and distributed has changed. The result is that these works are heterogeneous processes of creation, which act beyond the object in the gallery. To achieve any significance, these works rely on an understanding of computational aesthetics. In other words, a physical realisation of the process, a work in the gallery, is a derivative of the main core of these works, which are the social interactions that determine their process. A great deal gets lost by neglecting to take this into account, especially the energy, surprise effect, fragility of the illusion, and the transience of the moment.

Seeing the processes as the core of the work seems to clash with conservation strategies that are concentrated on conserving objects. Whereas some museums have become accustomed to the idea that an artwork can no longer be presented with the original material or equipment, how to handle versioning? Who or what will be responsible, decisive or accountable for artworks that are open (freely available for everyone to use, share, document, collect, conserve), dispersed, distributed and dependent on people outside the scope of the museum?

5.5. FLOSS and museums

To find answers to these questions, in December 2012 I organised a discussion with conservators, curators and researchers. *Naked on Pluto* was used as an example to study the biography of a software based artwork that depends on third parties, and functions on open source principles.³⁴⁸ After Aymeric Mansoux explained the project, the line of questioning followed methods used in the documentation models, which I analysed in Chapter 4. To get at the core of the artwork, the participants focused on specific topics: the different components of the work (material), context (social, cultural, technical and artistic), formal and structural elements (databases, codes, navigation, architectural, performative elements), versions of the work, spatial/environmental parameters, external dependencies, behaviour (What does it do?), processes (data gathering, participatory events, etc.), documentation, rules of engagement (In what ways can someone access and engage with the work?), visitor experience, time (What are the characteristics of timing in the game?), and legal issues. Mansoux tried to answer the questions as best as he could, but often they proved too broad. For example, the question, ‘What does the work do?’ needs further elaboration. For instance, ‘At which level?’ Or, ‘What is the difference

³⁴⁷ For such approaches in conceptual art, see, for example, Alberro and Stimson (1999).

³⁴⁸ The discussion was part of the working conference *Collecting and Presenting Born-Digital Art* (CPBDA), see also n. 340. This particular group, moderated by Gaby Wijers (LIMA) and Paulien ‘t Hoen (SBMK), with special guest Pip Laurenson (Tate), discussed the process a work goes through when it becomes part of a collection and the information that is needed to keep the artwork alive in the future. They involved different roles and disciplines from artist to registrar and from curator to conservator. For more information, see <http://www.baltanlaboratories.org/bordigital/> (accessed August 2013) and Dekker (2013:3-11).

between behaviours and processes?’ These challenges were also acknowledged by the participants, and noted down for further improvement.

One of the reasons for this broad approach to questioning could be the inexperience of the interviewer. It is difficult to ask questions when you do not know exactly what to ask. It could be argued that someone ‘not hindered by any knowledge’ could pose unexpected questions that lead to interesting insights, but in most cases the questions will generate a lot of noise and annoyance on the part of the interviewee. This became clear when, at a later stage, I asked the artists to complete a documentation model that was developed for digital artworks.³⁴⁹ The main irritation focused on the generalised nature of the questions and unclear ideology from which questions were developed, which according to the artists, failed to capture essential aspects of their work and instead seemed modelled after a specific type of net art. For example, as Mansoux commented, the need for technical documentation of software-based artwork could easily follow already established documentation methods:

If an institution is willing to go down the road of documenting the technical aspect, they should not reinvent the wheel or believe there is something special/magical about the underlying mechanics of the work that deserve to be treated differently. It’s software, therefore there is already a plethora of existing documents/guideline (dry readings) on the matter. Said differently a technical documentation of someone’s work would look the same as the technical documentation of yet another web app. From a “Critical Code Study” perspective it could be interesting for scholars to enhance such a technical document with contextual information for instance if the source code reveals artistic traits, private jokes or whatever relevant aesthetics, but apart from that...³⁵⁰

This explains the difficulty posed by existing documentation models, as mentioned earlier, and confirms the need for personal feedback, preferably in a one-to-one setting.³⁵¹ But it also signals that perhaps conservators are focused too much on specific (technical) aspects that are not necessarily the most difficult, or important, to deal with.

More importantly, and what remains unanswered in the above as well as in the discussion during the conference, is how museums can deal with open licences. This challenge surfaced each time the question was asked: ‘When would you no longer recognise or acknowledge the work as *your* own?’. What this question showed is that people do not fully understand the meaning and function of open source, because, as Mansoux tried to explain, ‘it is neither my work or someone else work, it is free software’.³⁵² The object-oriented way of thinking about conservation and the processual way of thinking from open practices, where the authorial role is addressed differently, clearly clash. From a licensing point of view, the question is not relevant because if the work is modified by someone else,

³⁴⁹ Enge and Lurk (2013:270-81) developed this documentation model to introduce the concept of the ‘work logic’, which proposes to transfer the parameters of the classical and material based documentation methods in conservation practices to the semantics of digital artworks.

³⁵⁰ Aymeric Mansoux/Marloes de Valk/Dave Griffiths, personal e-mail conversation, 9 July 2013.

³⁵¹ See also Beerkens et al. (2012) who emphasise the personal presence between the interviewer and interviewee.

³⁵² Aymeric Mansoux, recorded discussion from CPBDA, 15 December 2012, in personal archive.

it is no longer the same work, since one of the underlying rules of some open software licenses is that changes are credited. Modification can be made, but it would have to be credited as ‘based on *Naked on Pluto*’. In cases that are less related to licensing, such as Domanovic’s or Dullaart’s work, this is not even necessary. The act of versioning or commenting and re-use are what count. This does not mean that the artists mentioned do not have a preferred way of exhibiting, or documenting, the work. It means that there are no fixed rules. As such, anyone can present, exhibit, preserve, document, or do as they see fit with the project without permission from the artists. Potentially, even an acquisition could happen just as easily, where a gallerist or distributor could sell a work to anyone interested.³⁵³ However, the artists see the acquisition process in reverse: The process and the development is what they are paid for, and the outcome is for everyone else to use. This means that economic ‘acquisitions’ at institutions are related to an engagement with the practice, and not to the outcome of that process. Put into practice, this would extend the role of the museum to one of producer, or facilitator, of artworks.

In summary, the way a work develops is informed by the ‘licenses’ that are used. Even though they are not necessarily written down, further distribution and the future of the work could be influenced. Consequently, it is crucial to first understand the meaning and function of the ‘licenses’ used and versioning methods before trying to describe and document a work. Also, the economic acquisition model would likely differ from other practices. For example, in performance or conceptual art, the ‘idea’, ‘concept’ or ‘instruction’ of the work is acquired by museums. But in most cases the institute acquires a development – and possibly an evolving – process. What are then the consequences of this reversed practice for conservators? How is a process conserved?

5.6. Shifting roles: from conservator to curator

The production of artworks by museums is not necessarily new, museums already have a tradition in commissioned artworks. However, in most cases (for example Whitney’s Artport and Tate’s online commissions) these works have a different status. They are not part of the collection archive, which means that the museum is not required to take care of, or preserve these works.³⁵⁴ Similarly, conservators are closely (re)tracing creation processes to understand which decisions were made and consequently how a work can be restored. Although restoration may not be the final solution for net art, certain aspects are stable, such as some parts of the *Naked on Pluto* installation, the stacks of paper from Domanovic or the styrofoam balls by Dullaart. These traces can be presented in a way that ‘form becomes attitude’. Such efforts need to recognise their contradictory or paradoxical status. As with documentation, they are reconstituent traces. Next to these could be emulations of processes that open

³⁵³ Aymeric Manxous, personal conversation, December 2012 in Eindhoven.

³⁵⁴ For more information about these kinds of contracts and the difference between collection and commissioned work in relation to the Whitney Artport, see Verschooren (2007:5-6). This is not to imply that museums are not trying to change this situation. For example, Whitney Artport (curated by Christiane Paul) is trying to bring the commissioned net artworks into the collections. Similar initiatives are undertaken by other museums. For example, the earlier mentioned initiatives of the Variable Media Network and Matters in Media Art.

to new explorations and discoveries. As such, a museum moves from being a custodian of ‘dead objects’ to a place where conservation of the old goes hand in hand with production of the new. In this sense, an ‘open conservation method’ means engaging with the work on its own terms, thus following different directions. In other words, by embracing variability, the core remains. The core connects to the value (and excitement) of openness that is connected to its practice through engagement in the developing process, its extension into the future, and the re-use (of parts) of the work.

Proposing that a work is open and can be shared among many challenges the museum’s traditional focus on the original, or authentic work. As I will show in Chapter 6, this is not to say that these works are not authentic. As Kelty reminds us, sharing produces its own kind of order; it influences operating systems and social systems (2008:142). In other words, the question is not whether museums can deal with the notion of a value free artwork, but can the museum be FLOSS? When adhering to an open approach (in the sense of re-creation and reinterpretation), reinstallation is less of an obstacle. It would have to be acknowledged that multiple versions – or even parts of a work – exist and are scattered around different platforms. Within certain restrictions, freedom of choice is possible and likely leads to interesting results. This process shows itself already in the practice of curating. An example is the ‘recollection’ in August 2011 of the exhibition *Op Losse Schroeven: Situaties en Cryptostructuren* (1969) at the Stedelijk Museum in Amsterdam.³⁵⁵ At the time, the exhibition by Wim Beeren was one of the first to present process art (the show opened one week before Harald Szeemann’s *When Attitude Becomes Form*).³⁵⁶ The exhibition in 2011 drew on unique archival and documentary materials that were shown together with some works acquired after the exhibition in 1969. The current curator’s comments are remarkable:

Through the Recollections series, the Stedelijk hopes to present a starting point for new research. By exploring its rich collections of both artworks and archival documentation—including posters, film and photographic material—the museum can revisit its most distinguished exhibitions and reconsider their impact many years later. In this way, new histories are written, as contemporary reflection gives way to new critical perspectives.³⁵⁷

When following an open approach, conservation might become more of a curatorial challenge. Firstly, even though it may be possible to preserve the technical aspects of net artworks, it becomes near impossible to preserve works that rely on third parties that use proprietary hard- or software. In these cases, the value of open source seems to not matter as much. This is because alternative solutions need to be conceived that are more likely found in the curator’s area of expertise (who is familiar with conceiving different presentations) than in the conservator’s (who primarily deals with what is in front

³⁵⁵ The term ‘recollection’ is the name of the series of events of the Stedelijk Museum that looks back on legendary exhibitions from the museum’s history. For more information, see, <http://www.stedelijk.nl/en/press-releases/stedelijk-museum-presents-recollections--op-losse-schroeven#sthash.7ZcrJfxX.dpuf>.

³⁵⁶ Beeren wanted to reflect the spirit of experimentation that informed the works on display, and draw attention to ephemeral performances and conceptual interventions outside the walls of the museum, any of which were intended to critique both art and the museum. For more information, see: Dippel et al (2005:282-285 and 473-483). A website accompanied the exhibition in 2011, showing foremost the historical material http://stedelijk_recollections.studiojoyo.net/. Next to that, a virtual tour could have been seen on a mobile phone. Unfortunately, this cannot be accessed anymore.

³⁵⁷ http://stedelijk_recollections.studiojoyo.net/ (accessed May 2012).

of her/him).³⁵⁸ Secondly, in cases of versioning, where a project is part of a larger continuum of other online or offline projects, the question of what constitutes a work is not always easy to answer. A process such as this is more about selection, organisation and mediation – curation – than conservation. An interesting proposal is made by Rudolf Frieling, curator at SFMOMA. Frieling describes a position where the museum as a ‘producer’ is able to re-exhibit works via performative strategies, including commissioning other artists to conceive new installations for collected artworks (Frieling 2014). To a certain degree, this reflects the scenario of *Museum Futures: Distributed* (2008), albeit less radical.³⁵⁹ In this science-fiction film, the museum’s employers are interdependent with their technology. Embedded in the public domain and p2p mesh cultures, the museum is versioned to a place of responding architecture, where it does not seem farfetched that bots and scripts trigger conversations and potentially create artworks. In both scenarios, the choices made to determine what and how an artwork is presented are more important than what and how to preserve it.

5.7. Embracing loss and forgetting

It can be argued that this statement implicates an endorsement of loss and forgetting (or even an argument to not include net art in museum collections).³⁶⁰ Instead of seeing this as a negative statement, I would like to embrace the ‘art of forgetting’. Such an art of forgetting is beautifully demonstrated in the work *Composting the Net* (2012) by Shu Lea Cheang. Whereas most art projects that deal with waste and trash paint a rather negative picture of the present or future,³⁶¹ *Composting the Net* takes all the content of a website or e-mail list and shreds the words and images into ‘compost’, turning the archives into forgotten instances of history (Fig. 5.17). But, like seeds from a tree, the actions of digital worms generate fresh sprouts that refuse to be trashed and buried. Seemingly, dead data is fertile and open to new perspectives. It could well be argued that allowing things to be forgotten is not a bad thing. The question highlights an often (deliberately) ignored issue – that of historical representation, which Boris Groys (2002) calls the ‘museum taboo’. The modern museum’s strategy of presenting and collecting prevents repetition because once historicised in a museum collection, a work cannot be replicated. As Groys argues, ‘If the past is collected and preserved in museums, the replication of old styles, forms, conventions and traditions becomes unnecessary. Further, the repetition of the old and traditional becomes a socially forbidden, or at least unrewarding practice’ (2002). What Cheang³⁶² proposes is a cycle,

³⁵⁸ Although distribution, sharing and re-using is best facilitated with open source.

³⁵⁹ The film, commissioned for the 50-year anniversary of the Moderna Museet in Stockholm, is made by Neil Cummings and Marysia Lewandowska. For more information, see <http://www.neilcummings.com/content/museum-futures-script-0>.

³⁶⁰ Similarly, it is argued that museums (and one could add archives in general) are not so much storage machines as machines for forgetting (Holthof 1998).

³⁶¹ See, for example, Kroker and Weinstein (1994) and Mark Napier’s project *digital landfill* (1998), which anticipates an exploded digital superhighway that is littered with road kill and taken over by spam.

³⁶² As mentioned several times, the idea of using copies and creating a new work from existing work is more accepted in curatorial practices.

Which is durational, generative and repetitive. A cycle is a natural process, while “recycle” implies “the making of something else”, which inevitably generates more waste (Dekker 2012b).

As such, a cycle represents a more natural approach to preserving the past, departing from the assumption that without repetition there is no learning, and without learning what remains is a fleeting yet endless desire to get to the next new thing.

Let’s dig a little deeper into the meaning of waste. Sticking with the work of Cheang, the subjects of compost and trash are recurring aesthetics in her work. Die-hard open source coders along with circuit benders are scrambling through utterances of code, tracing dead links, building something from scattered parts, and trying out endless emulations, while piecing together different parts. This is the scenario of *I.K.U.* (2000), Cheang’s movie (which later was cycled into *U.K.I.* (2009), a game and performance (Fig. 5.18) which depicts an Internet porn enterprise, GENOM Corp., which introduces orgasm-on-the-go for a mobile phone chip: dumped into an e-trash environment, coders, tweeters, and networkers are forced to scavenge through techno-waste to collect old and forgotten human orgasm data. It is also a (future) scenario that may well resemble the work of net art conservators. If a net artwork breaks, maybe the software is fixed or adapted to the environment once or twice, or emulated, but in time and after attention fades it is neglected, thrown away and replaced by a new version. What remains is waste, digital litter, and hardware junk. It has been argued that garbage and waste belong to the domain of forgetting, and archaeology is the prime field that thrives on scattered fragments and perpetuates through assemblages. The approach of archaeologists is to focus on past artefacts, behaviours, attitudes and beliefs, but according to Shanks et al. (2004), 99% of archaeology depends on looking at traces through waste or refuse.³⁶³ A condition of waste is common to all things, and it is through examining and arranging waste that meaning is created (Shanks et al. 2004). Although it can be argued that this is also an archaeological trope, what is interesting is that both of these notions regard waste as the end state of objects. However, emphasising waste as redundant, a residue, a remainder, obscures the ongoing and continuous status of the object itself.³⁶⁴ In other words, it denies what objects are yet to become.

Jill Sterrett, head of conservation at SFMOMA, suggests applying the concept of the ‘archaeological find’ in reverse by using the mechanism as a method to trace the engagement with an artwork and to reveal its life over time (2009:227).³⁶⁵ Instead of rigid solutions or records she advocates ‘planting finds’ (documents with information value), which account for the variables that

³⁶³ The connection between archaeology and garbage (archaeologists studying garbage) was made in the 1970s when William Rathje started the science of Garbology at the University of Arizona. For more information, see Rathje and Murphy (2001) and Shanks et al. (2004). ‘Waste’ as a scientific topic has boomed for about a decade. See, among many others, Scanlan (2005), who examined the language and symbolism of waste as the background to the predominant culture of novelty, that is brought to life as the monstrous, the sublime, or simply the eclipse of human endeavour.

³⁶⁴ Analysing the installation *Tate Thames Dig* (1999) by Marc Dion, William Viney (2010) demonstrates that waste is not a fixed state but it continuously changes due to the materiality and handling or presentation of the material. A process that is most visible in the accounts of the conservators who worked on the installation.

³⁶⁵ An archaeological find does not only communicate aesthetic values; it also has information potential and semantic values (Berduco 2008:248-258).

are present in the presentation and conservation of many contemporary artworks. This could lead to a new situation where museums would need to re-assess their finds each time from a new context, or as Sterrett says, it will adjust

the burdensome tone of authority museums inherit as sources of objective truth by actively committing to seeing and seeing anew over time, [and it will] cultivate, among other things, ways of manoeuvring with variable speed (2009:227).³⁶⁶

By following such a position, re-installation or conservation will be a mode of iteration that is underwritten by absence and loss.³⁶⁷ It shows an intention to reframe discourses and opens up alternative possibilities. Instead of asking what to save, keep, or preserve, the first question becomes what to give up, erase, or abandon. Rather than relying on a past, the notion of traces relates to a future, the function of a trace being that of a ‘carrier’ of information whose significance is more appropriately valued in a ‘not yet’ context. Such a less permanent and more insecure approach takes into account a future perspective, and leads towards a propensity to change and development.

5.8. Conclusion

When following an open approach to conserving artworks, the conventional roles of artists and (museum) professionals will change. Whereas the artist might still present the initial idea, and at times even guide the development of the work after its launch, in many cases and at a certain point(s) the artwork is distributed in a way that gives various parties control over the work. Besides challenging common concepts and strategies in presentation and conservation, these artworks also show that conventional roles are turning. Artists are not necessarily the main actors anymore. For example, the public can take over parts of the work. If the work itself is distributed in various versions, forms and platforms, knowledge from a wider perspective is needed to consider development, presentation and possibly conservation of what has become part of a work. Van Saaze concludes in her dissertation that due to the nature of the work – in this case the project *No Ghost Just a Shell* (1999-2002) by Phillip Parreno and Pierre Huyghe, where multiple actants are involved and co-determine the process – when considering conservation:

accomplished knowledge and existing practices in different areas (vocabularies, the work itself, the artist’s intent, professional roles, economic models) [need] to be revised. The notion of ownership as defined as freezing the art object in a singular state is in need of a new conception; one that acknowledges a more tactile, practice-based, and interventive kind of engagement of the museum professional (Van Saaze 2009:162).

³⁶⁶ Similarly, Clavir suggests from the position of conservators in anthropological museums and ethnographic studies that ‘by accepting that cultural meanings change, conservators are being asked not only to value the less tangible attributes of an object but also to realise the acceptability of continuing process and the validity of a more abstract, shifting context than is usually found in conservation’ (1996).

³⁶⁷ When referring to conservation, Bosma talks about the importance of ‘losing control’ over digital objects. Such loss of control could lead to unpredictable outcomes, and involves the engagement and collaboration of audience members who are part of an ever-growing network that enables extending the lifespan and scope of a project (2011, 164:91).

While my analysis supports this conclusion, I would like to suggest that this engagement should focus on the involvement of people, both experts and users from outside the museum.³⁶⁸ This could lead to what I have called in Chapter 4 a ‘network of care’, which signals a group of people that form around artworks to take care of it by sustaining (parts of) its continuation. This is not to imply that the role of artists is less important. Throughout my dissertation I benefit greatly from discussions with the artists who provided insights that would have been hard to obtain without them. They are important sources to understand the intentions of the work, but their perspectives should not be limited to restoring the past. Just as much, their knowledge should be used to enable an open future. In this sense, Frieling (2014) signals a new role for the museum as a producer of artworks that are validated by the artist(s). However, artists do not want to be involved in all cases. Unlike Frieling’s suggestion of ‘an “expanded performance” where the artist, the institution and the public are co-producers’ (Frieling 2014:156), the museum is more of a facilitator of development and processes.

It would be easy to say that, when acquired, net artworks will change the structure of the museum. Although this may (and will) be true, I think it is more fruitful to see how a new *modus operandi* will affect other, more traditional, works of art. Similar to what Lev Manovich has been arguing for in a cultural analytics approach, a change in perspective will bring insight into practices that are inherently processual. At the same time, this will generate new knowledge within traditional approaches and methods.³⁶⁹ What the effects of such an approach could be is beyond the scope of this dissertation. I leave this as a question for future research. But in the next chapter, drawing from my case studies, I explore several recurring issues to present new perspectives on old disputes, specifically the value of authenticity and the function of documents.

³⁶⁸ An attempt to see what this would mean, and how this change could be effected, was made in a workshop ‘Advancing Collaboration in Museums’ that I organised with SFMOMA (Jill Sterrett and Layna White) and Hot Studio San Francisco (Chris Jones and Kelly Meanley) during Museums and the Web conference, April 2012,

http://www.museumsandtheweb.com/mw2012/programs/advancing_collaboration_in_museums. The idea of the workshop came from the concept of a ‘Framework’ that was developed by SFMOMA in collaboration with Hot Studio as a result of their successful Team Media meetings (see also n. 121).

³⁶⁹ Set within a humanities context, Cultural Analytics analyses large datasets of cultural information using data mining and interactive visualisation. The difference between this approach and previous ones is that this methodology uses computational analysis to generate new metadata - particularly in the areas of image processing and computer vision. Patterns are visible that were before not seen, thus generating new insight and knowledge. For more information: <http://lab.softwarestudies.com/2008/09/cultural-analytics.html> (accessed May 2012).

6. Embracing variability and process

In several instances throughout this research I have questioned whether net art should be part of mainstream art worlds, which are typified by art historian and critic Claire Bishop as ‘commercial galleries, the Turner Prize, national pavilions at Venice’ (2012). It could be argued that similar to earlier disciplines like photography, video and film, net art will become part of established art systems, in one form or another. As again Bishop affirms, ‘no exhibition is complete without some form of bulky, obsolete technology’ (2012).³⁷⁰ However, as outlined in this dissertation, the qualities of net art are very different from these media.³⁷¹ If the amount of attention from audiences is any point of reference then net art does not depend on this mainstream. Over the years it has created its own mainstream. Next to its online presence, net artworks are regularly presented and exhibited at festivals, small art organisations or by artists themselves in specific contexts and places.³⁷² Net art is also very successful in generating many different audiences. Ippolito even argued that the audience for net art far exceeds the audience numbers of any given contemporary art museum (2002b:486). So, what would happen if net art remains as it is? As I have shown there are several initiatives and structures developed to come up with solutions to safeguard or care for net art. Some of these examples think *through* the material and result from the inherent characteristics of net art, including its production (that is most often based on open source principles), a presentation that relies on participation, and a distribution system that evolves through linking and networks. To take one more step into an unsure future that departs from this scenario, if net art is acquired and collected it will bring about a change in existing structures that is unforeseen in the history of art museums. Perhaps more than anything else this is a reason why net art has been able to hold its *status aparte* for so long.

Two such changes will be explored in this final chapter: the changing notions of authenticity and documents under the influence of net art. Whereas in Chapter 3 I analysed authenticity in the light of variability, in this chapter I examine the value and meaning of authenticity in net art. Taking advantage of the ‘variable nature’ of definitions of authenticity, I propose a broadening of ‘authenticity’ by connecting it to ‘alliances’ that signal and affirm the constructive nature of net art as described in Chapter 1. The second change concerns the nature of documents. In Chapter 4 I argued for a reconsideration of conservation practice in favour of documentation. With documentation being part of the artwork, replacing the artwork, guiding the conservation of an artwork, or even being

³⁷⁰ In the article, Digital Divide, Bishop questioned why contemporary artists are not critically reflecting on the digital media they use. It caused quite a stir in what she refers to as the ‘new media art’ sphere. The criticism was mostly directed to her exclusion of ‘digital artists’ from her examples and conclusions, enlarging a divide between different art practices. Although it was not Bishop’s intention to close any gaps, her points as well as some of the comments are relevant when discussing divides between arts. For more information see the comments on Bishop’s article <http://artforum.com/talkback/id=70724>, the resulting discussion on the CRUMB e-mail list, <https://www.jiscmail.ac.uk/cgi-bin/webadmin?A1=ind1209&L=new-media-curating#4> (accessed May 2014), and Bishop’s response on some of these in *Artforum*, January 2013, p. 38.

³⁷¹ For more information on medium specific differences between these media, see for example Paul (2008) and Graham and Cook (2010) in both publications these differences are set out in relation to curating, exhibiting and collecting these works.

³⁷² For example the Speedshows organised by Aram Bartholl of Internet art exhibitions taking place in small Internet cafes (<http://speedshow.net>) and the BYOB (Bring Your Own Beamer) events initially organised by Rafaël Rozendaal (<http://www.byobworldwide.com>).

regarded as the artwork, documentation (and as such documents) have become important elements in art practices. As explained in Chapter 4, documents are defined in various ways, but in what way will the characteristics of net art, particularly its networked and processual nature, influence the existing notion of the term document? In the second section I analyse the value of the term by bringing it in relation to performativity and cultures of circulation. Moreover, I will address in what way these notions are helpful when thinking of a conservation of net art.

6.1. Authentic Alliances

As mentioned in Chapter 3, Lowenthal (2008) argues that authenticity will always be variable and — due to the insistence on the value of cultural and geographical differences in determining authenticity — will become even more challenging, if not contradictory to pursue.³⁷³ In the same article he points to the devaluation of the notion and use of authenticity by referring to authenticity as a buzzword of the Twenty-first century that has come to describe anything non-commercial. How legitimate are the criteria used to validate something as authentic? As such, why should a Western perspective on heritage be the leading one? Although these are important questions that deserve answers, in this chapter I ask in what ways do artists practices challenge the relevance and value of authenticity?

In line with Laurensen (2006), I argue for a practice that encourages thought about ‘authentic instances’, leaving intact the established notion of authenticity but allowing for change and variability. This way of working rejects the freeze frame associated with traditional conservation and acknowledges the value of the communicative turn in conservation, which as mentioned in Chapter 2 recognises historic and cultural changes (Muñoz Viñas 2005). However, and taking advantage of the ‘variable nature’ of defining authenticity, I argue for something more speculative and process-driven: the notion of ‘authentic alliances’. Alliance stems from the old French word *aliance* — from *alier* (modern: *allier*), to *ally* in English — and is used to define ‘anything akin to another by structure, etc.’ (Webster’s 1913). In his analysis of Proust, Deleuze describes several sets of ‘machines’ that, through learning and process, produce collections of incomplete parts (fragments):

A One and a Whole that would not be the principle but, on the contrary, the “effect” of the multiplicity and of its disconnected parts. One and Whole that would function as effect, effect of machines, instead of as principles. A communication that would not be posited in principle but would result from the operation of the machines and their detached parts, their noncommunicating fragments (Deleuze 2000[1964]:163).

Following Deleuze, I connect the concept of alliances to authenticity to stress the importance of seeing seemingly different parts as a whole. These alliances function as ‘effects’ that show the deeper reality underlying a well-formed whole constructed from parts. From this perspective, I emphasise the

³⁷³ By emphasising that any culture can decide on its own heritage as described in the Nara Documentation (Larsen 1994), Lowenthal argues that every culture therefore is ‘entitled to do just as it chooses with its own heritage, which need not be shown to, let alone shared with, others’ (2008).

inherently intertwined structures through which net art is created. As mentioned in Chapter 1, this approach implies that artworks reveal themselves through fragments and that such fragments are likely to change over time, creating not a nicely narrated story of events amounting to a plot, but conjunctures that, through relations, attain meaning. In other words, net art acts like, and at times is, an assemblage. This capacity to develop and unfold, or to be in a dynamic state of becoming, allows for a new logic of authenticity to be identified. In the following I argue that the different components of net art are not necessarily authentic, rather it is in their alliances that the authenticity of net art can be identified.

While recognising the controversies surrounding the importance of authenticity, I argue that it is still valuable to use the notion of authenticity for gaining a better understanding of net art's inherent qualities, which are leading when thinking about a conservation approach. The notion of authentic alliances opens a path leading to new directions for conservators, by suggesting ways for dealing with forms of (in)visible structures that exist all around. Before identifying authenticity in net art, I will first describe the significance of the term in conservation, and art practices in general.

6.1.1. The significance of authenticity

The discussion of authenticity in the arts is often a battle of the original versus the fake, the forgery, or the copy. It could be argued that in the framework of art the original was, at least for a long time, considered as a nostalgia for an old reality, a nostalgia so intense that it has twisted or obfuscated the possibility of seeing the new in the copy. In other words, the copy should be regarded as a method to open a new space, and affirming difference instead of similarity.³⁷⁴ This process is what Deleuze has described as the simulacrum (Deleuze 2004[1968]). The simulacrum undermines the distinction between copy and original, meaning that, for example, the production of a photograph has no relation to that of the object photographed. It is not the obvious resemblance that is important. It does not stand in for the original, but instead turns against it to open a new space. Following Deleuze on the 'power of the copy' as the real simulacrum against the failing world of representation, I argue, by connecting alliances to authenticity, for the opening of a possibility that goes beyond old dichotomies of copy and reproduction versus original. As described by Deleuze, 'by simulacrum we should not understand a simple imitation but rather the act by which the very idea of a model or privileged position is challenged and overturned' (2004[1968]:82). Moreover, by recognising technical reproducibility as an important characteristic of net art (and not solely as a copy but as something that mutates), a new logic of authenticity can be identified.

As a thinking exercise to grasp the discussion around the notion of authenticity in the arts, I consider two different writings by authors who have set out to define the importance of authenticity. In

³⁷⁴ Arguably, one of the main drivers of this 'nostalgia clinging' is based in economics, taking advantage of human's inclination to binary thinking: comparing the new with the old, the copy with the fake, the reproduction with the original, etc., and thereby attaching higher values to the original.

the process, I aim to find new answers by revisiting old logics. These references bring out specificities of authenticity in relation to the ‘copy’ (Goodman) and ‘reproduction’ (Benjamin). These characteristics, or qualities are (still) important subjects in the discussion of net art and thus could be helpful for identifying authenticity in net art.³⁷⁵ Furthermore, the two authors have been and still are influential in their particular field.³⁷⁶ The first is the publication *Languages of Art. An Approach to a General Theory of Symbols* (1976) by philosopher Nelson Goodman, a text from which Laurenson also draws in the before mentioned article (2006). I pay particular attention to Goodman’s distinction between *autographic* and *allographic* artworks and discuss how these notions can be accounted for in net art. Secondly, I consider Walter Benjamin’s critique of mechanical reproduction in his essay ‘The Work of Art in the Age of Mechanical Reproducibility’ (1969[1936]), where I focus on reproducibility. In the process I will briefly hint at the parallel between Goodman’s notion of the ‘history of production’ and Benjamin’s argumentation of the ‘original’.

Goodman’s writing on a systematic general analysis of modes of reference and of types of symbol systems has been particularly influential to the question of determining authenticity. He addresses several fundamental questions in the philosophy of art, one of which relates especially to questions of ontology of identity that for Goodman is conveyed in authenticity, and helps to define artistic value (Goodman 1976).³⁷⁷ For Goodman, the issue of the identity of artworks relates to the question of whether a work’s *history of production* – meaning by whom and how the work was made – is integral to the work or not (1976:122). In short, his arguments are based on the discussion of copies and the differences between forgeries and original works.³⁷⁸ To distinguish between the two, he introduces the concepts of *autographic* (those works of art that are created and made by the artist, i.e. painting) and *allographic* artworks (works of art that are created by someone and executed by someone else, i.e. a musical performance of an existing notation). For Goodman, the question of authenticity is only relevant for *autographic* artworks, because there is no notation to depart from. In music the performance is always executed. Each performance may vary but will not affect the status of any subsequent performance as a genuine instance of the work (1976:237). Therefore, it is not

³⁷⁵ Despite the often quoted ‘easy’ duplication of digital code, discussions of net art in relation to authenticity, forgery, copies and appropriation thrives. To name some examples, Douglas Davis (1995) argues that there is no longer a clear conceptual distinction between original and reproduction in any digital medium. Julian H. Scaff (2002) similarly dismisses the possibility for authenticity or authorship in digital art: http://pixels.filmtv.ucla.edu/gallery/web/julian_scaff/benjamin/essay.html (accessed 26 August 2013). Douglas Thomas (2002) argues that authenticity can only be asserted through authority. Domenico Quaranta (2012) interviewed some victims whose work was appropriated by Eva and Franco Mattes: <http://artpulsemagazine.com/eva-franco-mattes> (accessed 26 August 2013).

³⁷⁶ This claim perhaps requires a more elaborate defense, however it is not the aim of this research to provide it. My arguments do not depend on the influence or criticism of Goodman and Benjamin in their respective fields. It suffices to say that Goodman’s writing have been particularly important in the field of art history and conservation, and Benjamin in digital media and cultural studies, although cross-overs also exist.

³⁷⁷ As emphasised by Dutton, much of the theoretical debate around authenticity is focused on distinguishing forgeries and fakes from original artworks. See, among others, Dutton (1983, 2003) and an edited volume by Mattysek (2010) that deals with the issue of ‘the death of an artwork’, or the conservation of the original in contemporary art. This debate has, of course, a relation to the economic values of artworks. However interesting, this topic will not be dealt with in depth, but only hinted at. For more information about the historical formation of cultural capital related to the culture of copy, see among others Fyfe (2004).

³⁷⁸ According to some, this binary also existed in art and philosophy discourses for many years, leading to the ‘jargon of authenticity’ (Adorno 1973[1964]). To quote Adorno: ‘While the jargon overflows with the pretense of deep human emotion, it is just as standardised as the world that it officially negates; the reason for this lies partly in its mass success, partly in the fact that it posits its message automatically, through its mere nature.’ (3) thereby criticising existentialism, according to Schroyer, because it ‘mystified the actual relation between language and its objective content.’ (xii) – making authenticity into a binary term for judging ‘good’ and ‘bad’, or as Goodman argues ‘genuine’ art (1976:99-122).

important whether the work is performed from the original score or a similar copy.

The second reference deals with the notion of the copy in relation to authenticity. Specifically, the classic essay *The Work of Art in the Age of Mechanical Reproduction* (1969[1936]) by Walter Benjamin, which is still mentioned in critical theories of contemporary visual culture (Crimp 1984). Benjamin discussed the reproduction qualities of photography and film, and questioned the concept of originality in artworks that use these media. He argued that technical reproduction threatened the aura – and authenticity – of a work. In the reproduction, the link to the moment of creation, its creator, the evidence of, and connection to all that the artwork has endured is lost. He claims that a debate about authenticity could only take place outside reproduction techniques: ‘the whole sphere of authenticity eludes technical (...) reproducibility’ (1969[1936]:220). The emphasis is thereby placed on the artists’ ‘touch’ and the artworks’ presence in time and place, whereas technical copies can be seen (or heard) in any place or time. Benjamin connected authenticity to the ‘aura’ of the artwork. He argued that is not merely a matter of who made it, when or where, but the purpose of the object’s existence in the world. It includes many elements, such as line of ownership, publicised authenticity, cultural values, and religious and secular history. In other words, aura signifies the artwork’s relationship to its external context. The aura of an artwork is tied to its authenticity, which is defined through a series of effects on the artwork. For instance, authenticity is associated with the physical changes the unique object has suffered throughout history, its changes in ownership, the particular authority of the work (there can only be one original), the actual site of its performance, and the domain of tradition. As he wrote, authenticity is ‘the essence of all that is transmissible from its beginning, ranging from its substantive duration to its testimony to the history which it has experienced’ (1969[1936]:221).³⁷⁹

Benjamin like Goodman, distinguished between an original and a reproduction, but whereas Goodman was foremost interested in distinguishing a forgery from an original, Benjamin was more interested in the question of whether the invention of photography has transformed the nature of art (Benjamin 1969[1936]:227). He argued that with the loss of ‘aura’, aesthetic experiences pervaded popular culture and even politics, making it impossible to distinguish art from non-art.³⁸⁰ This is not to say that art made through reproduction machines could not be emancipatory. Benjamin did not deny the continuing importance of aesthetic experience, only its romantic conceptualisation that is immanent of meaning and isolated from the rest of life (Shusterman 1997:31). In line with Benjamin, I recognise technical reproductions as important processes in net art. In effect, these processes are one

³⁷⁹ Benjamin is not very clear when using the term ‘reproduction’ when referring to both copies of original works of art and works which are multiple by nature, such as bronzes, terra cottas, coins or more contemporary materials like woodcuts, lithographs and photographs (Benjamin 1969[1936]:218). Mattick (1993) attributes this to Benjamin’s ‘aphoristic and associative, as opposed to carefully analytic, character of his writing’. Benjamin’s interest does not lay in making these distinctions, but rather ‘specifically in photography as a means for the production of images of the world in general and of artworks in particular’. The latter is also suggested by Sidney Tillim (Mattick 1993:n. 2): ‘For Benjamin ‘mechanical reproduction’ is really an umbrella term for processes that have some technical similarities. Such as the woodcut, the photograph, and the photomechanical print. Actually, they result in completely different object – a fact which changes their character and function and the way they are consumed. Therefore the process have different cultural meanings’. See also Jacquelynn Baas (1987).

³⁸⁰ The influence of political context is important to note in this regard. Benjamin made his statements during the rise of Fascism in Germany. Along with advocates (and close friends) Bertold Brecht and Adorno, Benjamin claimed that art needed to be serviceable to political ends, it seems that Benjamin’s argument was mostly motivated by polemics rather than historical goals. See Richard Wolin’s study of Benjamin’s aesthetics (1982).

of the defining characteristics in the creation of net art, as such extending the question of aura, and authenticity. In his analysis, Benjamin ignored the possibility for change and mutation in reproduction processes.³⁸¹ This neglect is probably due to Benjamin's attention for the reproduction of singular works of art. He overlooked attempts by artists like Marcel Duchamp who made (political) statements with his *ready mades* and *multiples* against the authenticity of an artwork and the monetisation of art (Naumann 1999a).³⁸² As I will emphasise in the following, this is where the singularity of the object and site explode, but where the aura, and thus authenticity, can be identified.³⁸³

Something similar happens with Goodman's notion of authenticity. While refraining from denoting identity to political or economical issues, in Goodman's *allographic* works, every example or performance is an original work made by the artist, and in the case of *autographic* works – which can include mechanical reproductions – originality can be defined in terms of relevant originals (photo negatives, etching plates, plaster models). This can be achieved, if needed, by introducing specific distinctions, such as 'printed by the artist', 'printed under the artist's supervision', 'signed by the artist', etc. This practice is common in commercial trading of reproducible artworks (Mattick 1993).³⁸⁴ Whereas authorship is also important in net art, it is now dispersed rather than confined to a single author. Similarly to object and site, net art dissolves the notion of single authorship. Paradoxically, the dissolution of existing categories provides the basis for an extension of authenticity. In short, trying to identify the activity of variability, change and mutation in net art, Goodman's distinction between *autographic* and *allographic* artworks, combined with Benjamin's political and economical concerns relating to reproduction, can be helpful in showing the aura of net art. In the process, net art is brought into relation with existing art discourses.

In the following I analyse authenticity in net art, guided by the definition of conservation as outlined at the Nara Conference on Authenticity which defines conservation as 'all efforts designed to understand cultural heritage, know its history and meaning, ensure its material safeguard and, as required, its presentation, restoration and enhancement'.³⁸⁵ In particular, I focus on the identification

³⁸¹ Benjamin presented flaws in his own theories simply by making mistakes or misleading assumptions about the history of mechanical reproduction, as well as its influence (or the crisis that Benjamin envisioned for traditional forms of artistic expression) on the art market where the original became more important rather than less (Baas 1987). There is another paradox in Benjamin's argument of authenticity, which relates explicitly to the practice of conservators. As Benjamin explained, 'The authenticity of a thing is the essence of all that is transmissible from its beginning, ranging from its substantive duration to its testimony to the history which it has experienced' (1969[1936]:221). In other words, the authenticity of an artwork consists of the identity of the piece, and its particular context and history, i.e. it is 'its presence in time and space' (1969[1936]:220). According to Benjamin, a conservator should be both faithful to the original intentions of the artist and the passage of time. But how then can the artwork's 'aura' be preserved? In order to restore an artwork one needs to change its passage of time. But when preserving the historical context, the artwork's origins, and thereby the artist's intentions, are obscured. This paradox was already seen by several others. See, for example, Lowenthal (1986), Dykstra (1996) and Dutton (2003).

³⁸² Naumann acknowledges that Benjamin probably did not know about Duchamp's ready mades, even though they met once, a year after Benjamin published his essay. The meeting was noted in Benjamin's diary, where he also referred to Duchamp's pochoir (a refined stencil technique) *Nude Descending a Staircase* (1937) as 'breathhtakingly beautiful, maybe mention...'. It is of course tempting to speculate, as Naumann does, that Benjamin based on this encounter wanted (or had to) revise his earlier statements about reproduction, but to date there is no evidence that this happened. For more information, see Naumann (1999b).

³⁸³ See also Berry (2001), who discusses the changing function of Benjamin's aura in relation to the Internet, especially concerning its site-specificity.

³⁸⁴ Mattick (1993) continues that it would be necessary to ask 'whether it is not "aura" but commercial value which is associated with uniqueness'. Although this is a relevant question, which requires attention especially in light of contemporary art, it is less relevant for net art – as this has not (yet) entered the art market in the same way as, for example, contemporary art.

³⁸⁵ The Nara Document on Authenticity (1994, appendix 2) <http://www.international.icomos.org/fr/component/content/article/179-articles-en-francais/ressources/charters-and-standards/386-the-nara-document-on-authenticity-1994>.

of the material, the author and the dating of the work. In the process, I question the assumption that net art cannot be authentic.

6.1.1.1. Identifying authenticity: work

The first identifier for authenticity deals with the material properties, or components, of the work. In other words, what does the work consist of? As Laurensen describes, the common conception of an artwork (the conservation object) is as ‘a unique object’, and the ‘notion of authenticity is based on physical integrity’, which guides decisions about the changes that can be made to a work (Laurensen 2006). As the analysis of *mouchette.org* has shown, the work consists of a set of different outputs, or projects, which relate to a core identity but are presented – and distributed – separately. The projects were created over years and are difficult (if not impossible) to retrieve or trace again. The artist does not remember all of the elements of the projects or all of the performances and projects that are part of the Mouchette network. Since 1998, she has regularly checked the ‘referrer sites’ in the statistics of the *mouchette.org* server to trace new articles or projects, but offline events are harder to trace due to a lack of systematic registration. Such a distributed network of projects and events calls to mind what Laurensen refers to as ‘authentic instances’ (2006). But instead of departing from one form and presenting slight variations, *mouchette.org* is a (still growing) ecology of different projects.

Dealing with a dispersed network of projects is a challenge that is found in other works of art as well. For example, the project *No Ghost Just A Shell* (1999-2002) initiated by Philippe Parreno and Pierre Huyghe and mentioned in Chapter 5. It consists of about twenty-five artworks made by more than a dozen artists. Each work revolves around the fictional character Annlee. All the works have been exhibited separately but were brought together in an exhibition in Kunsthalle Zurich in 2002.³⁸⁶ The project was intended to continue for a number of years. A selection of artists, who were commissioned by the initiators, were offered the manga character Annlee free of charge. Unlike *mouchette.org*, the artists transferred Annlee’s copyright to the Annlee Association, a legal entity that belongs solely to the character. The contract stipulated that artists were not allowed to create any additional works with Annlee as a digital model. According to the artists, the contract liberated Annlee from circulation and from economic and artistic exploitation.³⁸⁷ It also cleared the path for museums to acquire the work, because the conditions and the work’s components had been set.³⁸⁸ Nevertheless, as it turned out, the work was editioned and different examples of the work now exist in several museum collections. Although this raises interesting questions, for example what constitutes the work and what is an edition, it is relatively easy to trace all of the works (Van Saaze 2009:159).³⁸⁹ To the contrary,

³⁸⁶ Issues around acquisition and conservation of this artwork have been thoroughly analysed and discussed in Van Saaze (2009:131-162).

³⁸⁷ For more information see <http://www.mmparis.com/noghost.html> (accessed January 2013). Nevertheless, projects dealing with the legacy of Annlee continued. See, for example, the exhibition *Yes, we're OPEN* (2011) at Netherlands Media Art Institute (Amsterdam), in which the curator Petra Heck asked artists to react to the legacy of Annlee. See also: <http://nimk.nl>.

³⁸⁸ The work was consequently acquired in 2003 by the Van Abbemuseum in Eindhoven, the Netherlands.

³⁸⁹ Interestingly Van Saaze (2009) also raises the issue of competition between museums and the driving force to create unique collections by which museums are branded.

locating the different traces in *mouchette.org* might prove to be more challenging, due to the lack of contracts, an exhibition where the separate projects can come together, a project end date, or other parameters that determine the project. Parreno refers to *No Ghost Just A Shell* as ‘an ‘aesthetic of alliances’, an aesthetic that questions artistic signatures and conventional art presentation models and makes it possible to address current exhibition, authorship and narration models’.³⁹⁰ Similarly, rather than talking about authentic instances, which still depart from the idea of a final finished work, *mouchette.org* can be identified as *authentic alliances*. In short, authentic alliances give prominence to a set of relationships and processes, and moves away from the idea of a final finished object.

For many years, a distinction has been made between those stressing the material conditions of an artwork and those who argue for the preservation of the conceptual part of the artwork. However, the cases in this research turn this binary position and steer towards the intricate relation between the two. For example, for many years the emphasis on identity issues was important to pursue for Neddham because of the meaning of online identity on the Internet. Over several years, she witnessed a change in web practices. People gave up fake identities in favour of revealing their ‘true’ identities. This could be traced to the influence of social network platforms like Facebook and LinkedIn, where a real life identity is preferred, or perhaps enforced, over a fictional one.³⁹¹ When these identity issues became less important, she not only revealed her identity as the artist behind *mouchette.org*, but she also started to stress the importance of language in the work, which is still closely related to identity, but moreover to coding as the building blocks of Mouchette.

One can be reborn on the Net as a new entity, in a form that one would choose and fabricate, as a living being with no teeth, no saliva, no skin, no smile. Instead, this being would have pixels, code, and text characters. Here is my portrait, my spitting image: All I am is words and pixels put together by means of codes and viewed on a monitor (Mouchette 2005).

In a similar way, and as mentioned in the previous chapters, Neddham, as well as Mansoux and Griffiths, emphasise the importance of personal coding or the hand of the author/artist, expressed through silly jokes, comments and particular styles of coding that influence the outcome of a project. Whereas I emphasised the differences in programming styles and their execution in Chapter 4, in their analysis of the role of code, researcher of digital aesthetics and curator Geoff Cox and artist/programmer Alex McLean moreover propose that there is a need to understand ‘programming as a performative speech act’ (2013:38).³⁹² In other words, they stress a specificity that can be interpreted as human-machine writing. This understanding of code underscores the distinction between the written

³⁹⁰ See: <http://www.mmparis.com/noghost.html> (accessed January 2013).

³⁹¹ As mentioned in Chapter 5, this shift was also the reason the artists of *Naked on Pluto* say that the work is only valuable to play actively for a few years. The concept of the work would be outdated as soon as people started to realise the working behind identity, or more specifically for their case the rights and uses of privacy by organisations behind social network platform.

³⁹² It is important to note that Speech Acts (Austin and Searle) are generally concerned with the function of language, not its aesthetic aspects, pleasures, or silliness. For more information, see for example Cox and McLean (2013) about the importance of the recognition of code as speech, and for linguistic analogies between code and natural languages; and drawing on Roland Barthes’ *S/Z*, Cramer (2003), who has made the distinction between ‘readerly’ and ‘writerly’ texts and claims that the command line encourages the reader to become an active producer by stating the difference between the act of writing and tool with which writing occurs. I elaborate on the performativity of Speech Acts in relation to coding in the next section.

code and its execution, while seeing them as not operationally independent but as deeply intertwined. One influences the other — and, in the case of live coding, mutually influence each other.³⁹³ Recalling Chun’s remark in Chapter 4, that software is layered and can execute unexpected results, Cox and McLean similarly argue, ‘Saying words or running code or simply understanding how they work is not enough in itself. What is important is the relation to the consequences of that action’ (2013:38). There are many levels of interpretation, compiling, and linking that take place in the execution of written code that can be understood only in the context of the overall structure and processes of the computer. In this sense, the authenticity of a work has to be considered as the relation between the material and conceptual. In its writing and thus in its execution, code is conceptual and material at the same time. This is not to say that the conceptual and material are identical. Code as an entity is fixed and static, a language that is interpreted by the program that runs it. As Florian Cramer and Ulrike Gabriel suggest, ‘software is machine control code, it follows that digital media are, literally, written’ (2001). Following this line, software may be read and executed as a mental act. Code could therefore exist without a computer (Cramer 2002). At the same time, code can also be machine generated, not requiring any human writing. Just as any other interpretation, the meaning of code depends on context. Therefore, a distinction needs to be made between code and its execution.

For many net artworks, hardware is considered less important than software, even though the aesthetics of the hardware on which the work is presented may influence the appearance of the project itself. From the use of colours to the size and resolution of the computer screen, important hardware elements (co)establish the aesthetics of artworks. Nevertheless hardware remains less important in the sense that audiences can experience net-based work on all kinds of equipment (from CRT monitors and laptop screens to smartphones and touch screens), and in very diverse environments (at home or the office, on a table, in bed, on the train, in the park, etc.). This is not to say that presentation of net art projects outside of their ‘natural habitat’ — for example in an exhibition — might not require specific hardware, but as I have argued, in some cases a fixation on hardware issues draws attention away from the concept of the work, turning it into an object, or even a material fetish. It therefore could be argued that authenticity in a net artwork is foremost traced by examining software, or the programming and the code.³⁹⁴ At the same time, code is not a standalone feature, or material, because of the strong relation between writing and execution, and vice versa. Again, it makes more sense to refer to *authentic alliances* that affirm the aesthetic intertwining of several actions.

6.1.1.2. Identifying authenticity: author

The second identifier for authenticity is related to the author of the work. With regard to installation

³⁹³ For more information about live coding in connection to preservation see Yuill (2008).

³⁹⁴ I do not talk about the visual effects of hardware here, because as mentioned, hardware is often of lesser importance for many artists (see Chapter 4). This is not to say that hardware issues are not important. For more information and research on hardware conservation, see Depocas et al. (2003), Serexhe (2013) and the project *Obsolete Equipment* <http://scart.be/?q=en/content/obsolete-equipment> (accessed 26 August 2013).

art, Van Saaze argues that questions about ownership, authorship and copyright are replacing traditional questions about the materiality of the object (2009:162). At first sight, such an approach seems suitable for *mouchette.org*, since it is a dispersed network of projects and participants, but when trying to determine the author(s) of *mouchette.org* this might turn out to be a pitfall. For example, since the start of the website *mouchette.org* in 1996, the question ‘who is Mouchette’ has kept many people busy. In 2009, the artist behind the website revealed the identity of Mouchette. However, its continued identity play, its persistence over the years, and the fact that anyone could become Mouchette, ensured that people still doubted the real identity behind Mouchette. The questions surrounding what is real and what is fictional, what is tangible and what is virtual are almost synonymous to questions raised by the Internet as an environment where people frequently take on different or adapted identities.³⁹⁵ This makes it difficult to identify an author as ‘authentic’, because anyone can assume a virtual identity. The author can be a group of people, as in the case of JODI. Authorship can also be dispersed among a group of people, as in the case of *mouchette.org*. By allowing others to become Mouchette, the notion of authenticity in the sense of its original author is further complicated.

However, there are at least ways to find the owner of a website. For example, the Internet service *WhoIs*. *WhoIs* is a free query and response protocol widely used for querying databases that store the registered users or assignees of an Internet resource, such as a domain name or an IP address. Anyone querying *mouchette.org* / *.net* / *.com* over the years would have noticed a change in the contact information. Martine Neddham, who hosted with Dreamhost, used to be visible as the administrative contact and registrant. She changed the data to conceal her identity a few years ago.³⁹⁶ Even in a case like this, however, fee payments make historical hosting information traceable. This can be achieved through Hosting History, a tool exclusive to DomainTools that gives access to IP addresses, name servers, and registrars for a given domain name over time. If a domain name has changed its host or has been transferred to another registrar, the old value, the new value, and the date when the event occurred can be retrieved, simply because this history is linked to a bank account.³⁹⁷ In other words, total anonymity on the Internet is not that easily achieved. However, it needs to be stressed that the owner of a domain name is not always the author of the content on a website.

Whereas Martine Neddham can be identified as the author of *mouchette.org*, she emphasises that different stakeholders can also claim authorship of Mouchette.³⁹⁸ In the first few years of *mouchette.org*, Neddham’s emphasis was on identity and the creation of multiple identities by other people. Even the building of Mouchette’s single identity is seen by Neddham as a collective process made possible by exchange of information with visitors to the site.

³⁹⁵ See, among others, Turkle (1995, 2009) whose research focuses on the psychology of human relationships with technology and on how people relate to computational objects. Or Butler (1990) on the performative qualities of identity.

³⁹⁶ The last update on *mouchette.org* that I could trace in a WhoIs query was made in 2007 by Weiss (2009:8.4.1).

³⁹⁷ <http://www.domaintools.com/research/hosting-history/?q=dreamhost.com> (accessed January 2013).

³⁹⁸ Several different names can be traced on the website, and several ‘copies’ exist such as Emilie Gervais’ *Parked Domain Girl Tombstone* (2013) in which Gervais uses *mouchette.org* as source material. But as far as I could find, these authors have not made a claim to authorship of Mouchette. This suggests that they are more commenters or participants than authors.

Mouchette is already a collective creation, even if it was the work of only one person originally, because my personality was built little by little through exchange and dialogue with visitors. It's quite the same thing as with real human beings: Each personality is built in relation to its environment, against it or with it. When I get insulted or accused I realize what emotions I have triggered; I therefore realize who I am, and that makes me become who I am.³⁹⁹

The copyright or ownership of these identities is never clarified on the website, nor through the log in membership. Nevertheless, Neddham can de-activate the different Mouchettes whenever she likes.

It is important that the limit between my Mouchette and the alternative Mouchettes remains blurred. The creations of the interface users are as legitimate as my own, and if their works get broken, I would fix them. Practically speaking, there is an admin login to the identity-sharing interface (the *mouchette.net*), so I have a list of the different Mouchettes and I can de-activate them if I want, and I still login regularly to allow access to the new subscribers.⁴⁰⁰

An interesting situation presents itself where singular authorship is put into question by giving control of the work to others. In return, the other 'Mouchettes' may give the project a degree of realism, even though it is still an authored situation and the precise outcome is unknown. Authenticity is invoked, but then questioned and reformulated through the presence of others who are 'individuated and metonymic, live and mediated, determined and autonomous' (Bishop 2012:237).⁴⁰¹

Different stakeholders may pose a problem for conservators when it comes to determining authenticity. Artists often create ambiguities with regard to the status of authorship(s). As mentioned in Chapter 1, ambiguity is an important characteristic of net artworks and, although it may not be easily found or traced in either the presentation or back-end of the work (as mentioned when discussing Blast Theory's strategies), it can be an extremely important element that, to a large extent, makes a work thrive. To stick with *mouchette.org*, this process becomes obvious when Mouchette talks about the function of questions in her work:

I can offer the use of my soul, that digital soul of mine, to hundreds of Internet users, that twisted soul, full of surprises and unexpected connections, that soul in the shape of a labyrinth. ... I lost the exit of this maze, and now I'm locked up in a soul which is keeping my body in jail. Which password will set me free, which magic formula, which string of characters? I believe this magic formula will be a question. Which question? That's the question! Yes, I love questions! I also like to write stories in the form of questions (2005:206).

Ambiguity and questioning instead of answering signals a process of exploration of a configuration of a shifting labyrinth of possibilities set in play by the work. Such practices are not confined to net art and can be found in the practice of many artists from all disciplines. As artist Lynn Hershman puts it, the truth 'is always apparent in the flaws, (...) it's in the crack in the wall, not the replication of it'

³⁹⁹ See Mouchette (2005).

⁴⁰⁰ Personal e-mail correspondence with Martine Neddham, 12 August 2012.

⁴⁰¹ Claire Bishop signals this process of authentication in performance art (2012:219-40). I argue that it also holds for net art, strengthening the argument of the performative qualities of net art.

(Giannachi et al. 2012:228). This process of concealment and ambiguity also complicates interviews with artists about their work. They might not genuinely be aware of the importance of certain aspects of their work (that therefore remain hidden). Or they might very well know the answers, but decide not to give them.

The artist's, or author's, identity may not always reveal itself on the web directly. The aforementioned tools can be used to trace the person behind an identity, but there is no guarantee. Whereas the status of Mouchette has been well established in the context of art, confirming and adding to the identification and genuineness of its authenticity,⁴⁰² other unresolved questions remain regarding authorship. Some of them relate to copyright, which can render traditional ideas of authenticity problematic. For example, when a collector buys a networked artwork that relies on audience participation, who will be able to claim their percentage of the purchase price: the artist(s), the audience who contributed parts of the work, or other parties in the network structure (such as a commercial platform that is used 'for free' in the presentation or distribution of the piece)? Could such an offer itself be seen as an intervention and become part of *mouchette.org*? These are important issues that have, at times, prevented museums and private collectors from acquiring net artworks (Dekker 2013).

For quite some time now, the idea of single authorship has been contested in the broader field of contemporary art. It has been argued that any project that involves multiple people who take on various tasks in the creation process is multi-authored. Whereas, in contemporary arts, the person who developed the concept of the work is often regarded as the author — even though others might have executed the work — the authorship of software(-based) artworks is less determined, especially in the case of generative software art, which, in whole or in part, is created by autonomous systems. Considering the function of algorithms adds another aspect to the notion of authorship, further complicating the determination of authenticity. In computer science, an algorithm is generally understood as a set of rules that precisely defines a sequence of operations (Stone 1972:4). This theoretical understanding of algorithms overlooks the functions it can fulfil for end users. Understating the crucial role of algorithms with their cultural, political and social values cannot and should not be underestimated (Goffey 2008).

Naked on Pluto is in this sense exemplary. The work is based on algorithms that operate bots in the game. They are self-executing processes and actions whose behaviours are triggered in a certain context. It is important to note that the bots in *Naked on Pluto* are personifications of algorithms used by Facebook and other social networks in order to feed on information about the user or give information to the user, often in less than transparent ways. The bots in *Naked on Pluto* are anthropomorphised, they prompt the user for responses and give continuous feedback on the game world. In other words, the bots generate the stories in the game based on the contexts in which they

⁴⁰² See the writing of Paul (2003), Greene (2004) and Tribe and Jana (2006). On her website, Mouchette keeps track of her extensive CV. <http://mouchette.org/cv/> and her blog which she started in 2010, <http://about.mouchette.org/>.

may find themselves (De Valk and Mansoux 2012). The bots therefore are not just mere aids, but actually have agency in creating the work. Cramer (2005) notes that conventional software companies try to stick to the idea that software functions mostly as a tool, an aid for the artist, thereby denying the larger function and authorship of algorithms. *Naked on Pluto* — as well as other digital artworks discussed by Cramer, such as Cornelia Sollfrank's *net.art generator* (1997) — reverse this idea by 'redefining authorship as the artistic design of an algorithmic process' (Cramer 2005:84). Cramer raises the question of who or what creates the work. One needs to ask, who is, or better, are the author(s) the artists who developed the conceptual idea, the artists who programmed the bots, the users who play the game, and the program itself? In other words, the authenticity of the author(s) is not a fixed position. Again, the notion of *authentic alliances* becomes useful, because it highlights that one author is not more important than the other in the creation of a work, and that each single 'author' can only function in relation to other 'authors', so that their alliance makes the project function. To return to Van Saaze's remark, in the case of net art, questions concerning ownership, authorship, and copyright may replace traditional questions regarding the materiality of an object. Moreover, these concepts have to become the subject of critical discussion. In addition, as I have shown, it is difficult to separate one from the other, as the materiality inherently questions these concepts. Thus, instead of one replacing the other, these concepts are intertwined and need to be looked at in alliance.

6.1.1.3. Identifying authenticity: date

The third identifier of authenticity relates to the dating of an artwork. As stated before, traditional conservation is based on the idea of a unique object, and tries to freeze the 'ideal state' of this object in time. Conservator Barbara Appelbaum has advocated for conservators to include non-material information in their research and practice, such as the respective value the object holds for its custodians or stakeholders. Reconstruction of such a 'full' history of the object would lead to the ideal state of the object (Appelbaum 2007:171-236). As such, 'an ideal state is defined by time, not by physical description' (Appelbaum 2007:176). It is difficult, if not impossible, to define an ideal state in the case of net artworks, since one of their characteristics is their continuous process. Again, this does not mean that artists do not have a preferred performance or presentation of a work. For example, Blast Theory said they preferred the performance of *Uncle Roy All Around You* in London over those in the other cities.⁴⁰³ Similarly, as mentioned in Chapter 5, the artists of *Naked on Pluto* have expressed their ideal presentation of the work.

However, the latter says little about the work in all its facets, but more about the experience of the work's presentation at a certain moment in time. This cannot be equated with identifying the intentions of the work and/or the artist. What is even more important is that such an ideal state tells more about the technical or conceptual dictates of the present than intentions for the project in

⁴⁰³ Matt Adams, interview Brighton, 5 February 2010.

previous manifestations. In this context, Clavir talks about what museums believe to be an ‘authentic moment’, which by implication turns them into static entities.

Freezing a culture’s history at one moment in time in museum displays, the “ethnographic present” (as it has been termed in anthropology) creates an understanding of indigenous cultures’ history as being important only within a constructed, fixed period in the past (Clavir 2002:32).

This attitude signals one of the biggest differences between museums and artists in the way they regard their legacy. Although this may not apply to all (net) artists, many of them change the presentation of a work according to the respective space, finances, or context, adapting it each time it is presented (Ippolito 2008, Noël de Tilly 2009). Museum conservators and curators often point out that a presentation is always formed in time, through talks with the artist, until a final presentation is chosen.⁴⁰⁴ Such a practice can be seen with JODI, who frequently added to a presentation of their work, and Neddham, who believes that the preservation of a work of art ideally becomes a new work:

An archive is never the “freezing” of something. Ideally, the preservation of a work of art becomes a new work of art. I have attempted that a few times, and this idea of “preserving the old work by creating a new work” is always on my horizon. I have made a series of works that re-used and re-staged specially selected parts of the database. My text database is composed of all the entries to different works (suicide page, lullaby for a dead fly, etc...) and I could choose a collection of texts with some keywords and stage them in a specific way.⁴⁰⁵

Similarly, the artists behind *Naked on Pluto* put a lot of emphasis on the re-use of a game engine, which provides a platform for making new works. It could be argued that, in the case of *Naked on Pluto*, the game engine is more of a tool than a conceptual part of the project, while Neddham’s work uses the content of her projects to create new ones. However, *Naked on Pluto*’s creators see the game engine as both conceptual and artistic, and even as the most crucial creative part of their work. As Griffiths says:

I always have problems with these distinctions between art “content” and “tool” where software is concerned - but in this case I think there is a continuum ranging from the bits of the code that are entirely “nuts and bolts” – the saving of game data, the client/server communication protocol. Other parts are built in a certain way that fits with the artistic themes of the project, inspired by what we were doing and talking about at the time.⁴⁰⁶

The artworks discussed here may continue to develop indefinitely by building on the existing work to create new variations. The artists do not see their projects as static, but as constantly developing. From challenges with regard to their registration — how to enter the work into standardised databases — to decisions on what exactly to conserve, such a variable approach is very difficult to accommodate

⁴⁰⁴ Personal notes from remarks that were made during the conference *Collecting and Presenting Born Digital Art*. (see n. 340).

⁴⁰⁵ Personal e-mail correspondence with Martine Neddham, 12 August 2012.

⁴⁰⁶ Personal e-mail correspondence with David Griffiths, 28 December 2012. This also recalls Neddham’s wish mentioned in Chapter 3, to have a software that lets her create by archiving, which likewise alludes to the idea of an artistic tool, i.e. a tool deriving from the work as well as being the work.

within contemporary museum conservation practices. Bowker already suggested while analysing biodiversity databases that the organisation of time, space and matter are crucial in database construction (2005:138). Although it is possible in theory to create a database that can handle all of these data elements and relate them to each other in various ways that trace different histories and variations, the question remains whether it would be desirable to implement such an organisation of data? Rather than promoting advanced databasing models, I argue, as mentioned in Chapter 4, for an extension of the use of databases and documentation models that move away from being ‘enforcers of truth’ to boundary objects that trigger dialogue and in the process become departure points for creating new stories (Van Saaze and Dekker 2013).

It is important to acknowledge that net artworks are never stable — since technical changes and updates continuously shape the work. It is also important to see them as localised and specialised entities, both in the sense that they can be time-based and that their appearance may vary over time.⁴⁰⁷ Conservator Hanna Hölling describes how small changes to artworks, especially media artworks, are frequently made in museum collections, particularly when artworks are taken out of the warehouse in order to be reinstalled in a different place (2013:199). Similarly, artist Paul DeMarinis states that to preserve analogue media is to refrain from playing them ‘each replay is a partial erasure and a new recording – an overlay’ (2011:223). However, these changes are different from the ones I am referring to in net artworks where change is sometimes made at the expense of the current artwork.

One implication of taking an approach of ‘localised knowledge’ is the realisation that conservation of digital artworks will always be based on case studies. It will make it hard to implement and pursue standardisation. Knowledge dependent on time and context can become contradictory. When ‘local’ solutions are crucial, what happens to the authority of a conservator, or a museum? In other words, whose voice(s) will be the leading ones in issues of conservation, or who controls knowledge? Knowledge may reside with the artists, the audiences, the programmer, the curator, and others. While this condition may balance out knowledge hierarchies, it also calls for education and critical thinking about technical and social systems, as well as their function, possibilities and limitations, in order to confront political and ethical challenges.⁴⁰⁸ In other words, it requires paying attention to elements that are not directly visible but still determining factors. Furthermore, this approach calls for changes within the institutions that are currently dealing with cultural heritage in order to enable them to take maximum advantage of new knowledge systems and collaborative ways of working.

⁴⁰⁷ In the use of the term ‘localised’ I am following Deleuze (2000[1964]), who distinguishes the localised from the totalising notion of standardisation. Latour (1987) has also emphasised that universal knowledge is bound by localised time and space, and, moreover, that such specialised knowledge tends to move through sparsely populated networks before it affects other (external) alliances. See also Bowker and his thorough analysis of the importance of and need for local knowledge (2005:201-221).

⁴⁰⁸ I am not suggesting here that everyone will be equal. In most decision-making processes this will not be the case. What I am emphasising is that there are people with different kinds of knowledge around the table. To put it simply: everyone has a piece of a puzzle. Together they complete the image. However, what the image will be is most often decided by those in charge. Foremost this raises questions of moderation.

6.1.3. Is *alliances* the keyword?

Taking advantage of the ‘variable nature’ of describing authenticity, I have argued for the adoption of *authentic alliances* to come to terms with the characteristics of net art. With this notion, I am not attempting to recover a past to better understand the present. By emphasising ‘alliances’, I want to uncover the core of net art, which is not always immediately visible, and address its implications. Identifying authenticity by looking at the work, author and date will not necessarily give a good understanding of authenticity, since some identifiers are more present than others. Moreover, such analyses would not do justice to the activity of the work. Net art is not a stable entity that can be examined by static means.⁴⁰⁹ What determines net art as authentic is found in its alliances. The notion of alliances offers a layered way of looking at artworks. This means that different elements of an artwork should not be identified as singular entities, but should be seen as influencing each other. Net art is a process, where different properties of the work, authorship and date are in alliance with each other. This does not mean that questions about material, author and date are irrelevant. There is, however, a shift of focus to questions relating to ownership, authorship and copyright. These concepts should be further analysed and discussed in the light of human and non-human (machinic) relations.⁴¹⁰

To return to Goodman it would seem logical to speak of net art as *allographic* artworks, as defined by Goodman, since net art is based on code, or digital ‘notation’, that enables the work to be reperformed. Unfortunately not all artworks are very specific in their ‘notation’. Due to constant software upgrades, changes need to be made to the code of the artwork, but changes are not always specified or annotated, let alone recorded in a standardised way by which comparisons can be made. Nor is the specific interactivity, or the performativity, made explicit in descriptions. The former already makes it difficult to reperform an artwork, especially since the often built-in ambiguity in artworks present in the latter will be lost. In this sense, Goodman’s concept of allographic artworks seems inadequate to account for all the nuances in net art. Since the artwork’s identity (as in Goodman’s ‘history of production’) is so specific, or individually based, it might make more sense to refer to them as autographic artworks, or at least partly so. Although code (as notation) can be defined as allographic, it can become autographic in its specific use or execution. It follows that notation as such does not identify an artwork as allographic; it depends foremost on the kind of notation. In other words, it should first be asked how easy it is to standardise or interpret and reperform the code, notations or score. This may be easy or more difficult depending on the knowledge of the person

⁴⁰⁹ Similarly, from the context of archival science, Heather MacNeil and Bonnie Mak argue that any digital resource is in a ‘continuous state of becoming and their authenticity is contingent and changeable’ (2007:26). In her analyses of multiple screen installations, Noël de Tilly (2009) concludes that the production and the presentation process is never complete due to the medium used and the intentions of the author(s). Whereas Noël de Tilly argues for ‘authenticity to be seen as a process through which the work is continuously constructed and modelled’ (2009:215), I argue for the notion of authentic alliances to emphasise the relation between different elements that change and influence each other.

⁴¹⁰ A first attempt to see what these concepts could mean for future conservation and collection policies and practices was discussed in an email exchange and several private talks between SFMOMA (Jill Sterrett and Layna White), Van Abbemuseum (Christiane Berndes) and myself. Excerpts were published in Dekker (2013:54-62).

looking at the code. But more importantly, it shows how relevant the ‘history of production’ is to the identification of the work.⁴¹¹

Another difficulty, which I briefly mentioned, is that Goodman focuses foremost on singular artworks. With regard to multiple, or reproduction media, like print, photography or etching, he notes that ‘the only way of ascertaining whether a print is genuine is by finding out whether it was taken from a certain plate’ (1986:119). In a footnote (p.119, 12) he adds that the execution of an artwork does not need to be done by the ‘original’ artist but can be done by others. The question needs to be addressed: Where and in what way does an ‘original’ exist in net art? Looking at the examples I described, it seems there is always indeed a first instance from which other projects, versions or variations are made, which can also be identified as part of the ‘history of production’. Nevertheless, in the case of commenting and versioning, it is questionable if such a distinction would make sense, as the process as a whole defines the work. On the other hand, the practice of acknowledging ‘original’ author(s) is particularly relevant, and even ethical.⁴¹² However, it may be more difficult to trace in other practices, especially in the case of anonymous author(s) who work on commercial platforms, or from difficult to trace servers. Identification might get lost in the process of linking, commenting and versioning.

The quest for the original leads to Benjamin’s argument that in mechanical reproduction the artwork loses its ‘aura’. Following the above, it would make sense to discard his argument, since reproduction, in the context of net art, does not equal a copy.⁴¹³ However, to this day, the discussion between real and copy continues, although it is often discovered and discussed in economical terms, i.e. when a ‘copy’ is sold over the ‘original’.⁴¹⁴ What is often discarded in these discussions is that the whole idea of forgeries stems from a time when it was technically difficult to make replicas of a work. Often, long periods passed before copies were produced.⁴¹⁵ A stronger argument is that reproduction in relation to net art (looking closely at the process of production) is tied to networks and not to singular artworks. Moreover, it is often explicitly emphasised and practiced. Thus, the use of copies is not only due to the ease of reproduction, as Benjamin assumes – especially in the sense of

⁴¹¹ The crossing from allographic to autographic can also take place in other types of artworks. As Kirk Pillow shows in his analyses of architecture: some works of architecture ‘have a historic specificity, and a site specificity that makes production history essential to their identification: they are autographic when built’ (2003:367).

⁴¹² This is particularly the case in some open source practices. Also see Chapter 5.

⁴¹³ Even if reproduction equals copy, the ‘anxiety’ by Benjamin that reproduction will diminish the aura of original works does not hold. Painters like Mantegna, Raphael and Rubens already recognise ‘the advantage of the fame that reproduction of their images brought’ (Lambert, 1987:147). See also Currie (1989), who argues that under certain conditions a reproduction of the original is as valuable and useful, aesthetically speaking, as the original. Also, the past decades have proven the added value reproductions give to original artworks. As Hillel Schwartz argues, ‘only in a culture of the copy do we assign such motive force to the original’ (1996:141). See also Baas (1987).

⁴¹⁴ See for example, the article ‘When Is Appropriation Just Copying?’ in the online magazine *Hyperallergic*, ‘a forum for serious, playful and radical thinking about art in the world today’ (14 December 2012; <http://hyperallergic.com/62026/when-is-appropriation-just-copying/>). Moreover, the quest for deciphering the original is turned into a quest. Probably the most famous to date is the Da Vinci Code, but smaller organisations and museums are also taking part by organising lectures, workshops and games. For a glimpse, see: the exhibition *Close Examinations* in the National Gallery in London (June-Sept. 2010), *Art or fake? Original or copy?* art evaluation sessions organised by RKD (Netherlands Institute for Art History) and the *The Complete Rembrandt, Life Size* exhibition which shows all of Rembrandt’s paintings in digital copies. This exhibition first opened in 2009 at the Beurs van Berlage in Amsterdam, and in December 2012 became permanently housed in the cellar of the Magna Plaza shopping centre in Amsterdam under the title *Rembrandt The Full Collection*.

⁴¹⁵ See, among others, Irvin (2005), who compares appropriation art to artistic forgery: ‘the forger is usually working from a position of technical advantage, often due to the elapsing of decades or centuries between the original artist’s production and the forger’s copies or pastiches’.

appropriation which, as the intentional borrowing, copying, and alteration of pre-existing images and objects, has a much longer history in the arts. A famous example is Marcel Duchamp's *L.H.O.O.Q.* (1919).⁴¹⁶ In the mid Twentieth century appropriation took on new significance due to the rise of consumerism and the proliferation of popular images through mass media outlets like magazines and television. Artists challenged notions of originality, as well as what it meant to be an artist.⁴¹⁷

In discussing current art practices of net art, a link to appropriation art makes the value of the copy more clear. As mentioned, artists who work in the web, or with other easily reproducible media, conceive of the original versus the copy in a different way to those working with traditional media. Their work deals with iteration, versioning and repetition. This is not to say that the quest for originality is not important, but it is achieved in a different way. For example, being the first to comment with a brilliant or funny idea.⁴¹⁸ Commenting can be seen as a mechanism for establishing individuality, as participants combine shared meanings and play with the shared parameters of the group in idiosyncratic ways. Moreover, in a time where there is an overabundance of imagery and sounds, artists have chosen to not use primary material but existing material, from commercial images, found footage, to artists' images. This attitude towards the re-use of material has become wide spread. Instead of seeing it in line with forgery and enforcing a binary opposition, it is more interesting, as also asserted by Deleuze (2004[1968]), to see it in relation to variations by putting existing content in new contexts and thereby creating new potential. As Parikka clearly describes: 'copying is not merely reproducing the same as discrete objects, but coding cultural products into discrete data and communicating such coded copies across networks: seeding and culturing' (2008:76). As such, in a computer age the term 'copy' has a distinct meaning, which is more than 'reproduction' because in a network culture it is entwined with communication and distribution.⁴¹⁹ These artworks are instances in a line of other works. They derive part of their meaning and value from this network. In the process, they blur the line of originality and production. As Latour and Lowe argue, 'once there is no huge gap in the process of production between version n and version n+n, the clearcut distinction between the original and its reproduction becomes less crucial' (2010).⁴²⁰ Following Latour and Lowe, accepting that a reproduction is valuable and could even have 'aura', opens the way to more stimulating discussions about what makes an interesting reproduction and what does not. Such a discussion will have to take into account other aspects of a work, next to asking what the work is, where it is taking

⁴¹⁶ The work is a cheap postcard-size reproduction of the Mona Lisa, upon which Duchamp added a small moustache and goatee. The letters are a pun – when pronounced in French it translates to 'she has a hot ass' (<http://www.marcel Duchamp.net/L.H.O.O.Q.php> accessed May 2014). For an elaborate account on Marcel Duchamp's *ready mades*, their distinction to a copy, and connection to appropriation art see Naumann (1999a).

⁴¹⁷ See among others Chilvers and Glaves-Smith (2009).

⁴¹⁸ It is important to note the difference between the 'first' generation of artists working online, although the 'comment' function was not used (even though technically it would have been possible to implement it), there was a smaller community in which 'originals' were easily distinguished from 'fakes' because people knew of each other through word-of-mouth, emailing lists, and festivals.

⁴¹⁹ As Parikka argues, the word copy in computer culture is used in two ways that often overlap. It refers to copy 'in the context of file-management and as a new phase of cultural reproduction, (...) designating a shift in the cultural techniques of reproduction from humans to machines', and as 'part of copy/paste—a cultural technique and aesthetic principle, (...) which presents itself as the key mode of becoming-object of digital culture—as easily reproducible and distributed packages of cultural memory' (2008:71).

⁴²⁰ In this sense, Bourriaud (2002b) talks about the script-like value of artworks, making a comparison with performance and theater. I believe this is a misunderstanding of the material and conceptual ideas of these artworks. I will elaborate on this difference in section 6.2.

place and who is doing it? It should also be asked how it functions, who is paying for it, how long is it meant to last, and how is it marketed and distributed?

To conclude, the artwork's authenticity is not found in its singularity, but rather it is identified in the ongoing dialogue between the open-ended work and its multiple producers. The degree to which information cannot only be duplicated but also mutates becomes of central importance to this discussion. Categories such as the author, human and machine agencies, the singularity of the object, and the functionality of a date explode in net art, but they also open to new ways of looking at authenticity.

6.2. The question of documents

I have argued, while discussing and comparing several documentation strategies in Chapter 4, for a reconsideration of conservation practice and theory in favour of documentation. By analysing several net artworks, the different roles and functions of documents became clear: documentation can either be part of the artwork, replace the artwork, or even be regarded as the artwork. What does this shift in the nature of what constitutes a document mean for theories that depend on this concept? Following the work by Suzanne Briet, I described and analysed the meaning of document and documentation. In her seminal text *Qu'est-ce que la documentation* (1951) Briet expanded the notion of the document to also include natural objects (the antelope), works of arts, and oral discussions (a professor discussing subject matter while teaching). Thus described, a document has the function to inform. Furthermore, by regarding documents as examples, or grouping, of things, she concludes that documents derive meaning from their context.⁴²¹ This approach is still valid today but it would need to be redefined and clarified, because what happens when the context, for example a distributed network, is the work? Can software and algorithms be considered as documents? Translated into digital culture, would Briet's assumption suggest that anything is a document, thereby emptying the meaning of the term document? Is something immaterial, such as a process or a network, a document? If not, then what are they? Offering a way to identify how a document is shaped and functions facilitates an understanding of a treatment of net art for conservation. In this section I focus my attention to the specific properties of a computational document that, according to Manovich (2013), should be termed as 'software performances' instead of documents. To see what this 'performance' means, I first explore the dichotomy between fixed and fluid documents. In line with computer scientist David M. Levy (1994), I conclude that digital documents are both, which moves closer to answering the question: Which aspects perform? Leaning on J.L. Austin's 'Speech Act' (1962), I suggest an expansion of the notion of performativity by connecting it to 'cultures of circulation', as discussed by Benjamin Lee and Edward LiPuma (2002). I thereby emphasise the need to see the processes underlying net art as

⁴²¹ It could be argued that Briet's notion of document makes anything into a document, especially since she never provides a clear definition. Following Day (in Briet 2006), I believe it is Briet's use of the word 'indice' – or indexicality, referring to the quality of being placed in an organised and meaningful relationship with other evidence – that distinguishes a document from an object.

constitutive acts.

6.2.1. Document as fixed and fluid

In his book *Software Takes Command* (2013), Lev Manovich argues that software culture is moving beyond Twentieth century terminology of document, work, message, or recording.

Instead of fixed documents whose contents and meaning could be determined by examining their structure and content (a typical move of the 20th century cultural analysis and theory, from Russian Formalism to Literary Darwinism) we now interact with dynamic “software performances” (2013:33).

He continues,

Computer programs can use a variety of components to create these performances: design templates, files stored on a local machine, media from the databases on the network server, the real-time input from a mouse, touch screen, joystick, our moving bodies, or another interface, etc. Therefore, although some static documents may be involved, the final *media experience constructed by software usually does not correspond to any single static document stored in some media*. In other words, in contrast to paintings, literary works, music scores, films, industrial designs, or buildings, a critic can’t simply consult a single “file” containing all of work’s content (2013:34).

Following in the footsteps of Manovich, I agree that a work’s content cannot be defined by a single file or document. In effect, what I am arguing is that net art’s networked and processual characteristics can only be defined by looking at their alliances. However, his emphasis on the real time construction of software that leads to dynamic outputs instead of static documents may be less sustainable. In other words, how dynamic, or fluid, is software and in what way do these characteristics move beyond existing terminology? In the following, I will analyse the differences between fixed and fluid documents before exploring the performativity of software.

The discussion between fixed and dynamic documents, and the question of the stability of digital media, has been present for many decades, but with the ease of editing digital documents it has taken off in the direction of ‘the fluid world of digital documents’.⁴²² At first sight, it makes sense to see a string of bits as being unstable or performative. But, as pointed out by Levy (1994) notions like ‘fluid’ and ‘performative’ are not only characteristics of digital documents, they also take place in non-digital documents. Paper notes, receipts and even photocopies can also be characterised as fluid. Although fixed at a certain time and for a certain period, often times annotations are made on an existing document, thus it changes as it is distributed to other people. The Bible is probably one of the best known examples. The Bible is a text that is adapted over time due to new printing and distribution

⁴²² The list of references is very extensive, but the main advocates of the fluid state of documents are from the ‘Hypertext era’: George Landow (1997) and Jay David Bolter (1991), who both declare and more or less emphasise that with the introduction of the computer, the author is dead, the reader reigns supreme, the book is doomed, and linear thinking passed. As I will show, the distinctions are less determined. The relation between author and user being more nuanced as interplay.

techniques, different translations and changing social contexts. Throughout history, specific parts of the Bible have been interpreted and used to argue for different things. In other words, paper documents are both fixed *and* fluid. Furthermore, Levy stresses that the meaning and value of the properties of a document are context dependent. Thus a document is defined as an *artifact* (a focus on documents as physical and social constructs) in relation to a *technology*, by which documents are created, manipulated and distributed. A document is also embedded in *work*, which means that documents are social artifacts and should be understood in respect to their use (Levy 1994:25).⁴²³ Levy goes on to say that not only are physical documents stable and fluid, but digital documents, like his example of hypertext, can and should be characterised as fluid *and* fixed. Although digital documents can more easily be changed, according to Levy this does not oppose its fixity. As he argues:

The very notion of editing realized by current text and graphics editors is based on fixity, for when one edits a document, one changes only and exactly those portions one wants to change, and the rest remains unchanged (fixed) (1994:26).

Thus fixity is still a central property of digital documents. One of the clearest examples in this sense is the web application Wiki. Wiki software is a type of collaborative software that runs a wiki system, allowing web pages to be created and edited using a common web browser. It may be implemented as a series of scripts behind an existing webserver, or as a standalone application server that runs on one or more web servers. The content is stored in a file system, and changes to the content are stored in a relational database management system.⁴²⁴ Changes that are made are traceable and accessible. New additions add to this historical record. Whereas the front end changes, the back end is fixed, logging all the entries that are made. Similarly, as explained in Chapter 3, Neddham insists on fixing certain aspects of *mouchette.org*. For example, the formal language of HTML that showed itself in the checkboxes and drop down menus on the home page, and the size of the screen images (by tiling the image instead of enlarging the images when screen resolutions became larger). With the introduction of computerised actions, changes are easily and quickly made. But according to Levy, there is a basic need for fixity even in the digital age. This need arises in order to create stabilities in an ever-changing world, but also in order to share things and create common understanding. As Levy explains, ‘written forms provide stable reference points that help us orient ourselves in social space’ (2001:37). In archival practices, the fixity of documents is necessary (even laid down in law) as a means of verification, but stability also plays an important role in e-commerce, security, privacy, digital rights management or defence. Particularly in the field of digital forensics, secure digital design solutions are a thriving business (Kirschenbaum 2008:56-58).

In today’s networked and distributed environments, where multimedia documents are more of

⁴²³ This brings to mind Briet’s argument when using the example of the antelope (an antelope in the wild is not a document but one in a zoo becomes evidence and is thus transformed into a document). More than Briet, Levy stresses the importance of seeing documents in relation to their social use. This is not to say that an emphasis on technical particularities is not important, but for Levy the nature and working of documents is often overshadowed by a focus on the tools with and how documents are made.

⁴²⁴ <https://en.wikipedia.org/wiki/Wiki> (accessed 18 July 2013).

the rule than the exception, fixity is still present in the display of Web pages (the presentation). But it is more difficult to trace in the back-end of the computer (the carrier). This becomes clear when considering the ‘save’ function in computer programmes. When opening a document, instead of the saved version, a copy of the document opens. This copy can be saved as a different document or replace the previous version of the changed copy. However, the ‘save’ function can act differently when multiple types of information enter in a document and it is saved in a separate location from the working desk computer, for example in a distributed network – at times also referred to as the Cloud.⁴²⁵ As explained by Richard Harper et al. from Microsoft Research (2011), when a document consisting of various media elements (text, images, sounds) like Microsoft OneNote, is saved in the Cloud, the document is not seen as a single document but as a collection of different documents.⁴²⁶ When changes are made to the document while trying to post it to the Cloud the transfer might fail because the system sees two versions of the same document, a situation which it cannot cope with in its file system. In a similar vein, and as explained in Chapter 3, an electronic file can never be accessed twice, because every time when opening a document, a copy is made that is a distinct instance of the file and which is stored in a unique location in computer memory (Kirschenbaum 2013). These actions seem certainly far removed from a document as a physical form, and even though the division between carrier and presentation has existed for many centuries (think for example of printing blocks, plaster moulds, audiotape, film, and video) it is clear that the gap between the presentation and the carrier is continuously growing.⁴²⁷ Speed, dependencies, flexibility and multiplicity challenge, and offer, possibilities to renegotiate fixity. In a world of intangible bits, largely invisible storage abilities, and multiple ways to easily move around and quickly edit documents, Manovich’s term ‘software performances’ could make sense, but what is meant by performances needs to be further clarified. For example, how do such performances function? However, when acknowledging that a digital document is both fluid and fixed, has the term document really become obsolete?

6.2.2. Document as performance or performative

Similar to Briet and Levy, Manovich argues that it is not enough to examine the ‘final’ presentation in order to understand contemporary media; social, historical and technological contexts should be taken into consideration when talking about or identifying documents. However, Manovich uses the term ‘software performances’ instead of documents because ‘it is software which defines the options for navigating, editing, and sharing the document, rather than the document itself’ (2013:34), thereby

⁴²⁵ Cloud computing is an ambiguous term without scientific or technical definition, and mostly used in marketing strategies that sell hosting services. In general, cloud computing is a synonym for distributed computing over a network and means the ability to run a program on many connected computers at the same time.

⁴²⁶ The researchers of the article use the term file instead of document. While acknowledging the different usages and meanings of the term file, they are indicating a file as a resource for storing information, which is available to a computer program and is usually based on some kind of durable storage (durable in the sense that it remains available for programs to use after the current program has finished). For the clarity of my argument in this thesis I will use the term document as a theoretical construct (in line with the documentalists approach).

⁴²⁷ A difference needs to be made between ‘simple’ websites, like blogs, that are designed for people to easily set up a small website and more complex websites that consists of expanded networked structures.

stressing the construction of software experiences. The discussion of whether the term document is still useful in a digital age is also brought up by Levy (1994 and 2001) and others like Buckland (1998). Although they do not come up with a solution, both argue to follow the path of the earlier documentalists (among others Otlet and Briet) by focusing on defining a document in terms of function rather than physical format. Although it is striking that Manovich does not refer to documentalist practices, his descriptions and analyses follows a similar approach of trying to answer the question of what constitutes a ‘document’, or in Manovich’s terms, to understand media software. So, in what way is the notion of ‘software performances’ useful, and should it replace the term document? What does performance mean in relation to software? Which aspects perform? For what purpose? For whom?

Net art can be understood as performative in terms of the meanings ascribed to it as well as in terms of the effects of its performance on the movements of data and information in communication networks. The verb ‘perform’ here means to act, to carry out an action or pattern of behaviour.⁴²⁸ In the context of art, perform or the noun performance, is mostly associated with Performance art. Although the term Performance art is a contested concept, because it encompasses diverse disciplines and media, and combinations thereof, to express ideas (Carlson 1996; Goldberg 1998). In general it involves the following elements: time, space, the performer(s)’ body, and is often done in the presence of an audience. The case studies I have described, *mouchette.org*, *Uncle Roy All Around You* and *Naked on Pluto*, can be said to incorporate these elements: they are time-based; take place in specific spaces; there are performers (humans and bots); and, visitors who perform actions.⁴²⁹ Phillip Auslander (2005) emphasises that in traditional terms it may be problematic to see bots (or technical tools in general) as performers, because such definitions generally emphasise the performer as someone who executes and in that process makes interpretations that lead to specific aesthetic effects.⁴³⁰ To make his argument he makes the distinction between technical and interpretive skills. When analysing the installation *Listening Post* (2002) by Mark Hansen and Ben Rubin, Auslander argues that the installation is an example of technical performativity, because it ‘constructs its performances by sampling [live] conversations on the Internet’ (2005:8). Auslander continues that ‘the particular technical skills possessed by *Listening Post* could not be found in a human performer, for no human being could scour the Internet, gather data, sort it, and display it in real time with the speed and accuracy of the machine’, thereby stressing the speed and accuracy of the technical capacities of the computer. The use of digital artworks as examples of performance art and in performance studies is becoming more common.⁴³¹ However, the distinction between technical and interpretative skills is supported in most cases. Although unarguably computers are incapable of human interpretation in the

⁴²⁸ <http://www.merriam-webster.com/dictionary/perform> (accessed 18 July 2013).

⁴²⁹ The connection of net art with performance art is made by several critics and artists over the past decades, most explicitly by Bosma (2011).

⁴³⁰ Auslander bases his argument on the quote from philosopher Stan Godlovitch who discusses musical performance, ‘interpretive skills involve aesthetic effects for which no obvious quantitative measure exists, and typically emphasise “expression” ...’ (Godlovitch 1998:54, in Auslander 2005:6).

⁴³¹ See, among others, Bay-Cheng, et.al. (2010), Giannachi, et.al. (2012), Bleeker (2012).

sense of reading between the lines or making assumptions, I argue that software programmes can perform in complex ways that go beyond a technical narrative as emphasised by Auslander. Such ‘performativity’ enacts what it represents or describes, furthermore connecting performativity with ‘cultures of circulation’, as discussed by Benjamin Lee and Edward LiPuma (2002), opens the discussion to see software performances as creators of the act they refer to.

The term performativity derives from British philosopher of language J.L. Austin. In his publication, *How to Do Things With Words* (1962) he describes performative utterances as statements that perform an action: a Speech Act. Rather than describe or report what is being done, they do (Austin 1962:5). Austin identifies three different Speech Acts: 1. A *locution* is the act of saying something without it being true or false, for example posing a question, passing information, announcing an event; 2. An *illocutionary act* is what a person does in saying something else, for example promising, or ordering someone something, the message and action come together; 3. A *perlocution* is an act that involves a certain consequence, but the utterance and the consequence do not happen at the same time. Especially, the illocutionary act fits the model of computation, which generally breaks down in three stages: input, processing and output, and is essentially about doing and saying something at the same time.⁴³² An input into the system does something, physically in the voltages and in the mechanisms of the machine, and computationally in the abstract mathematics of processing.⁴³³ According to Austin, not all illocutionary acts are automatically successful; certain conditions need to be met. These conditions are also important in programming – and not always met. There is often uncertainty and ambiguity in processing. As, for example, Arnold Michelson and Allen Levesque argue:

It is clear from the outset that with any real communication system we cannot expect to receive exactly what is transmitted. At the very least, we can expect noise to be added to the transmission, causing random errors (1985:4).⁴³⁴

Moreover, leaning on Claude Shannon’s communication model, Susan Ballard explains that information cannot occur when there is no noise in the process (2007).⁴³⁵ This means that performativity always has a certain level of unpredictability, uncertainty and ambiguity, or in other words, the input and output are not necessarily coherent.⁴³⁶ As exemplified by the case studies in this thesis, such ‘failed’ performativity is used by the artists, either actively as in the case of Blast Theory

⁴³² For more information about the model of computation, see, among others, Charles Petzold (2000) and Ive Englander (1996).

⁴³³ It may be good to stress that I am referring here to formal executions; it is not a social performance based on human conventions (as in Austin’s theory). Technologies, in and of themselves, do not bring about cultural or social change.

⁴³⁴ In modern computers many processes and redundancies are build in to reduce the effects of noise, making it unlikely that a computational error will occur. Nevertheless the more complex processes become, the more noise comes in which can lead to unexpected or unnoticed events. However even in ‘simple’ systems, like CRT and LED monitors ‘single transmitted voltage might simultaneously perform the one or zero of binary code, disrupt adjacent data with its electromagnetic noise, and be received as radio waves by an external antenna’ (Van Orden 2010), a process that was named Van Eck Phreaking. See also Van Eck (1985) and Kuhn (2004).

⁴³⁵ Arns (2005) describes many examples of artworks that use non-executable code. Similarly, many artists use errors (also referred to as Glitch) to make artwork. For more information, see among others Goriunova and Shulgin (2008) and Menkman (2011).

⁴³⁶ Live coders explore these characteristics of programming in their live performances. ‘Live coding is the activity of writing (parts of) a program while it runs. It thus deeply connects algorithmic causality with the perceived outcome and by deconstructing the idea of the temporal dichotomy of tool and product it allows code to be brought into play as an artistic process’ (Alexander, et.al. 2004:243-4). See Yuill (2008) for more information on a historical contextualising of code practices referencing scratch orchestra of the 1960s.

by making failing hard- and or software part of the overall performance, or as artefacts of historical instances in the case of *mouchette.org* by holding on to some errors instead of fixing them.

Such performativity of code also means that code is not one-to-one reversible, nor can it be seen as pre-set instructions for execution. As such, computational acts in art can be ineffective in the sense that doing and saying are not compatible, which of course (as also stressed by Austin) does not make the performative act less effective or successful. In short, performativity of code indicates that execution takes place by thinking *through* the material. However, it is important to recognise, as pointed out by Derrida (1988[1972]), that meaning, and context, of a text cannot be defined in its entirety, as in Austin's 'total situation' (1962:52). A performative utterance is always intertwined with structures of power.⁴³⁷ In order to recognise such contextual dependencies, I propose to extend Austin's performative acts with the notion of circulation as described by Lee and LiPuma (2002).

In their article 'Cultures of Circulation: The Imaginations of Modernity' (2002) Lee and LiPuma propose an alternative version of the concept of a speech act-based notion of performativity. They try to extend performativity to other discursively mediated practices, and by seeing performativity as an aspect of circulation, they want to move beyond reference and description (2002:193).

Performativity has been considered a quintessentially cultural phenomenon that is tied to the creation of meaning, whereas circulation and exchange have been seen as processes that transmit meanings, rather than as constitutive acts in themselves. (...) Cultures of circulation are created and animated by the cultural forms that circulate through them, including—critically—the abstract nature of the forms that underwrite and propel the process of circulation itself (2002:192-3).⁴³⁸

What would be the consequences of such an approach for net art? The 'act' of *mouchette.org* is often associated with identity play, Blast Theory with game adventures and *Naked on Pluto* with addressing privacy issues. One of the main problems for conservation of these kinds of works has been their networked nature. Would the approach of circulatory practices make these networked structures more visible and understandable in which networked is not only understood as a facilitator, enabling the artform, but as a constitutive act itself? In the following section I will trace the function of circulation in net art by looking at how movement performs in the code, specifically by looking at the hyperlink; in the interaction between code, programmer and context; and, in its distribution process. In the process, I ask what the 'act' of net art is and how it enacts the act that it represents? At the same time, such circulation and exchange of code involved in the infrastructure of communication will reveal certain power structures.⁴³⁹

⁴³⁷ See also Butler (1997) on the power of hate speech and censorship, and the influence of these language acts in cultural sites. Butler argues, that it is impossible to adequately define the performative meanings of words, since a context in which an utterance is made can vary.

⁴³⁸ In network theories the new forms of access, understanding and engagement with circulatory networks are explored (Benkler 2007; Castells 1996; Wittel 2001), but little attention has been paid to the dynamics of circulation itself as force of change.

⁴³⁹ I am leaning here on the article 'The Performativity of Code: Software and Cultures of Circulation' by Mackenzie (2005) in which he asserts that 'if we accept that information and communication constitute a central venue for the performativity of some important contemporary forms of power, then the circulation and exchange of software and code involved in the infrastructure of communication could

6.2.2.1. Performativity of a hyperlink

One of the main tools that Martine Neddham uses in *mouchette.org* is the hyperlink. A hyperlink points to specific data in the same text or to information outside of the text.⁴⁴⁰ The first hyperlinks were technically implemented in 1965, by a team led by Douglas Engelbart, and became the core function to interact on the Web in the 1990s after HTTP (HyperText Transfer Protocol) became the standard to control pages on the Web. Although the concept was already thought of many decades before, in the 1990s HTML (HyperText Markup Language) the text format for HTTP became the main language to organise content in a document.⁴⁴¹ Whereas most critics have approached HTML as a tool devised by humans in which visitors follow pre-described paths of programmers,⁴⁴² Donna Haraway argues that ‘as any good technology does, hypertext “realises” its subjects and objects. In short: hypertext is an ordinary bit of the material-discursive apparatus for the production of technoscientific culture’ (1997:125). She continues that the figure of hypertext should incite an inquiry into how and for whom connections are made (1997:128-129). Such connections are always interrelated and shared, complicating the agency of hypertext as it is no longer independent or held by individuals. As also suggested by Christopher A. Paul, ‘this opens the possibility of recognising technology and the circulation it encourages as a form’ (2005).

One of the main attractions for Neddham to work on the Web is this possibility of circulation. As she explains:

Something I still preserve as precious was the invention of navigation in a text by means of “links”, and in that way going from a web page to another web page. “Hypertext” was a word people often used at that time. It showed how much the web was perceived as a modification inside the structure of a text, breaking its linearity. After a while more features were introduced, for example “frames”. This made it possible to organise circulation in several pages. I wanted to get the viewer lost in a very complex navigation, where the placement of the links was invisible or unexpected (Dekker 2008:66-67).

As previously mentioned, *mouchette.org* consists of several pages that can be accessed from the home page. The home page is built in HTML frames that uses a form structure. There are checkboxes that visitors can click on, a drop down menu, and several invisible links that are revealed when moving the mouse over the page. Instead of the default arrow, a pointer (the icon for a hyperlink, which depending in the software, could be a small hand with an outstretched finger) shows up. The checkboxes, drop down menu and the use of pointers are typical form elements of early hypertext, and in this case all function in similar ways. The use of form elements was one of the first developments in HTML3,⁴⁴³ and basically served to submit data into a database or trigger an interactive sequence. The way to get

well be analysed in performative terms’.

⁴⁴⁰ <http://www.merriam-webster.com/dictionary/hyperlink> (accessed 23 July 2013).

⁴⁴¹ For more information on the history of HTTP and HTML see <http://www.w3.org/People/Raggett/book4/ch02.html>.

⁴⁴² The main theorists in early hypertext research are Ted Nelson (1974); George Landow (1997); and, Espen Aarseth (1997).

⁴⁴³ Iconic examples of the use of HTML form elements is *Form Art* (1997) by Alexei Shulgin, and the subsequent entries that were done for the Form Art Competition, see <http://www.c3.hu/collection/form/>.

interactive forms on a HTML website is most easily done by using Common Gateway Interface scripting, or just CGI. This allows the web server to recognise and handle the site as dynamic, which means that the server understands that any file requested from the special CGI-bin directory should not simply be read and sent, but instead should be executed. Each time the script executes, the output is different.⁴⁴⁴ Most of the hyperlinks in *mouchette.org* function as a means to move between locations, but because of the CGI scripting you never end up in the same place twice after clicking the link. Nevertheless, the connections are all kept within the site, although there are some outside links. For example, the links in the *International Fanpage* page, <http://mouchette.org/fan/fanpage.html>, are all embedded within *mouchette.org* (Fig. 6.1). Similarly, the *About me* page, <http://about.mouchette.org/>, set up in 2011 to collect all the news that is posted on the Web about Mouchette, redirects to a namespace site, and from there every link opens in a new window (Fig. 6.2).

There are some exceptions. For example, the *Trademark* is a page that directly links to another website, <http://drivedrive.com/mouchette/trademarking.html>, closing the *mouchette.org* website (Fig. 6.3). This website brings attention to fake Mouchette sites, or those who did not get Neddams (or Mouchette's) permission to carry the name or identity.⁴⁴⁵ By trying to trademark Mouchette, an appeal is made to 'protect her brand from hatemongers and imitators'.⁴⁴⁶ A dynamic movement is created that asks the visitors to either use the back button, the browser history, or re-type the address in order to return to the site. This openness of the site allows visitors to move away from the site to other locations. A more intricate use of circulation can be found in Mouchette's network, the place where everyone can assume Mouchette's identity and add content to the site, which initially links to another site <http://mouchette.net> (Fig. 3.8). When clicking the 'members site' the visitor is back in the *mouchette.org* domain, and it turns out that *mouchette.net* is merely a frameset. However, clicking on the 'non-members' link, opens a random website in a new window that relates in some way to Mouchette, for example a blog post, other net artworks by Neddams, an article, or what seems to be someone's homepage which has the same aesthetics as *mouchette.org* (Fig. 6.4). However, even though these links go to another website, when clicking on a link you might get redirected to *mouchette.org*. The more external circulation can be found in places where Mouchette really wants people to discuss with each other. This happens for example with the project *Suicide Kit* (Fig. 6.5). In this sensitive topic, Mouchette asks people advice on the best ways to commit suicide. Visitors can react by typing their comment after the question: *What is the best way to kill yourself when you're under 13?* (Fig. 6.6). When they leave a name and email address and click the send button, Neddams

⁴⁴⁴ For more information see: <http://www.w3.org/CGI/>. It is remarkable that the website allows you to access the CGI-bin, where normally one would see a message: 'You don't have permission to access /cgi-bin/ on this server' Mouchette plays on by giving an 'Error 0 -'. After clicking the stone in the middle of the page another form element comes in which after clicking generates an automatic email reply from one's email server to 404@mouchette.org with a ? in the subject line. Depending on where you click in the site, in the body of the email a message is shown, asking for a 'password=', or asking 'what are you doing here?='. Another click in the website returns you to the website with a 'Blind Jump'.

⁴⁴⁵ It is ambiguous whether this is a genuine appeal or it is set up by Neddams, in collaboration with Drivedrive.com, to attract attention to the <http://www.ihatemouchette.org/> website (which connects directly to the Drivedrive.com website) and the issue of trademarking on the web in general.

⁴⁴⁶ Drivedrive.com is a web-based art group that has been developing and disseminating new media art and design projects in Canada, the Netherlands, and Germany since 1999.

gets the message and can decide whether or not to post the feedback on the site. Although the discussion list is moderated, according to Neddham, this is foremost to prevent spam-related content from entering the site. Once the comment is on the site, <http://mouchette.org/suicide/answers.php3> (Figs. 6.7 and 6.8), the name of the sender is also visible. Clicking on the name opens the visitor's own e-mail account, ready to send the commentator a personal e-mail.⁴⁴⁷ This way Neddham encourages direct and 'offline' communication between visitors.

By allowing very little external circulation, emphasis is placed on the Mouchette community. Each time one tries to go 'outside', the branding of Mouchette is amplified. This way of hyperlinking is also used in many commercial sites to keep visitors within the 'brand-environment' (Paul 2005). In other words, technology is used to control movement and prevent visitors from going 'outside', reinforced by the intricate and disorienting way of using hyperlinks. Although it is of course possible to decipher the hyperlinked structure, the extensive and abundant use of hyperlinking at times creates the feeling of a labyrinth in which it is difficult to find a way out or derive meaning from. In many cases, each return to a previous visited site seems to contain new links that lead to different information than before. By asking opinions or advice from visitors and posting their answers in the website, *mouchette.org* actively tries to communicate with and between visitors. Similarly, by allowing people to become members and start their own Mouchette pages on the site, visitors are given the chance to be active in the creation and circulation of the site, albeit to a certain extent. *mouchette.org* allows people to reshape content, thereby turning the site into a place for continual reinterpretation. However, the exchange of information and movement of circulation take place primarily within the site. The behaviour and use of hyperlinks shape *mouchette.org* to a degree that its circulation enacts the work. The hyperlink is effective, or 'succeeds' as a performative act as it enters the visitor in an endless shifting of meaning, moreover into an *internal* labyrinth, which is difficult to define. The type of circulation also gives information about the kind of control the author, owner or web editor wants to exercise over the content in the website. This information is important to know for conservators because it says something about the intentions of the artist.

6.2.2.2. Performativity of a game-engine

Naked on Pluto can provide more insight in the effects of external circulation. In the following I focus on the game-engine as a supporter and driving force that enacts the performative circulation of the work. As mentioned, the game-engine is one of the core elements of the work, an artistic and conceptual tool that is actively distributed to be built on by others and used in different contexts. Mackenzie (2005) advances the idea that the free and open source software Linux is enacted through an ongoing collective and collaborative labouring process. In the following I will explain how such a

⁴⁴⁷ There is one more exception, which is the CV page of *mouchette.org* – <http://mouchette.org/cv>. This page has several links to articles or events that took place and all of the links open in another window. However, the CV page cannot be found on *mouchette.org*, and Neddham only gives the address when she is asked about it.

process can also be detected in the production and working processes of *Naked on Pluto*, especially in relation to the development of the game-engine, the use of bots, and the function of the game-engine.

Naked on Pluto is built as a client/server online game, which typically means that various gamers connect to a server and play with each other. They cannot communicate with each other, but communicate indirectly through the server. The model allows many people to play online with each other at the same time. The server is running all the time to provide the persistent world, and record the changes people make. It is the place where all the game logic happens, where the bots run and where the data is stored and processed, and where all the webpages and Javascript comes from. To manage the game play, run the AI for the in-game bots and manage user accounts and messages between them all, a *servlet* was written in Racket.⁴⁴⁸ Although it is more common to use PHP or Java for these types of management, they wanted to write a large game-engine using a simple and functional programming language.⁴⁴⁹ Racket is a programming language that is based on Scheme, a communication infrastructure for programming language research. Scheme is a functional programming language that follows a minimalist design philosophy and is now one of the two main dialects of the programming language Lisp.⁴⁵⁰ The developers of Scheme, Gerald Jay Sussman and Guy L. Steele, based their concepts on Carl Hewitt's theory of actors. This model of computation was object-oriented and thought of as a communication device between objects:

Every object was a computationally active entity capable of receiving and reacting to messages. The objects were called actors, and the messages themselves were also actors. Every computational entity was an actor and message-passing was the only means of interaction. An actor could have arbitrarily many acquaintances; that is, it could "know about" other actors and send them messages or send acquaintances as (parts of) messages (Sussman and Steele 1998:400).

Inspired by these ideas they build Scheme in 1973, and after revisions in 1978 it became very popular due to its small size and simple programming. Due to the free and open distribution of the source code, local implementation and dialects quickly started to emerge that led to overall improvements of Scheme, or derivatives like Racket.

As mentioned in Chapter 5, the propensity to share and distribute are important features of open source practices that are also followed in the development of *Naked on Pluto*. One of the consequences is that the project and the code become part of a larger historical development cycle, and at the same time these projects are seen as ongoing and distributed works.⁴⁵¹ This is certainly the case

⁴⁴⁸ A *servlet* is used to extend the capabilities of a server. Although *servlets* can respond to any type of requests, they are commonly used to extend the applications hosted by web servers. For more information: <http://docs.racket-lang.org/web-server/> (accessed July 2013). For more information on the early technical infrastructure of *Naked on Pluto*: <http://pluto.kuri.mu/2010/06/27/web-games-tech-for-beginners/#more-146>.

⁴⁴⁹ This choice also attests to their bottom-up approach, as referenced by Griffiths. There are two design philosophies, wonderfully described by Alan J. Perlis in the foreword of the book *The Structure and Interpretation of Computer Programs*, by Abelson, Sussman and Sussman (1996): 'Pascal is for building pyramids - imposing, breathtaking, static structures built by armies pushing heavy blocks into place. Lisp is for building organisms - imposing, breathtaking, dynamic structures built by squads fitting fluctuating myriads of simpler organisms into place' (e-mail conversation with Dave Griffiths, 30 July 2013).

⁴⁵⁰ For more information see, http://en.wikipedia.org/wiki/Scheme_%28programming_language%29.

⁴⁵¹ In response to the question if or by whom the project was taken up Mansoux answered that they did not actively track the further use, but

with the game-engine of *Naked on Pluto* that circulates through workshops, where distribution and further development are pushed. It could be said that the game-engine generates new creativity, thus producing numerous other manifestations. Although this can happen, it downplays the game-engine to a tool, whereas the way the game-engine develops and how it functions *is* the artwork. As stressed by the artists, it is the element of *Naked on Pluto* where ‘intention’, authenticity and originality can be found. Mackenzie (2005) concludes that Linux circulates through repetition and citation (due to constant changes made by numerous programmers that are implemented in successive releases). It could be argued that this is the default of all open source projects. It is the type of collaborative programming that repeats itself across platforms whilst it is also taken up in different contexts. It demonstrates collective social action. This means that power structures (of commercial software producers) are challenged. Although it is (rightly) argued that in practice such challenges often result in many people working for free,⁴⁵² focusing on the distributive site shows a more positive side: that of sharing and bringing people together. As Kelty argues ‘sharing produces its own kind of moral and technical order, that is, “information makes people want freedom” and how they want it is related to how that information is created and circulated’ (2008:118). While *Naked on Pluto’s* success in opening up issues of privacy on social networking sites is debatable, it is harder to contest the performativity of the game-engine, which has the ability to enact what it represents and describes through circulating processes.

Another characteristic of circulation can be found in the behaviour of the bots. In the game, the bots are the personification of some algorithms that are used in social networks:

They prompt the user for responses and they give continuous feedback on the gameworld so that everyone in the game can see that for example the barman is talking to a player, because it automatically shows up in the newsfeed, the front-end of the game.⁴⁵³

One of the main differences of *Naked on Pluto* from other online games is the use of bots for nearly all the autonomous activity needed in a massively multiplayer game. The bots perform in very similar ways as agents (or actors).⁴⁵⁴ I am referring to the concept of agents that is developed by Hewitt. He presented his actor’s theory as a new model of computation, which means that in response to a message an actor can make local decisions, create more actors, send more messages, and determine how to respond to the next message that it receives (Hewitt and Baker 1977). Thus, they are self-contained, interactive and concurrently-executing objects that possess an internal state and

that they sometimes got feedback (personal interview with Mansoux and De Valk, Hoorn, 31 October 2012). Similarly Sussman and Steele express that they do not follow exactly where the development goes, foremost they are excited about the progress. ‘We knew Scheme had really made it when researchers no longer cited our papers, but simply took Scheme for granted as part of the communication infrastructure for programming language research. The most gratifying thing to us about Scheme is that it no longer belongs to us. We are happy to have made a discovery that many other people have found useful’ (1998:403-4).

⁴⁵² In his article ‘From Participation to Power’ Kelty scrutinises the concept of participation in relation to power structures, arguing that ‘participation is about power, and no matter how “open” a platform is, participation will reach a limit circumscribing power and its distribution’ (2013:30).

⁴⁵³ Personal interview with Aymeric Mansoux and Marloes de Valk, Hoorn, 31 October 2012.

⁴⁵⁴ With the advances in bot technology, the distinction between agents and bots is not very clear and the terms are often used interchangeably (Proffitt 2013).

communication capabilities (Wooldridge and Jennings 1995).⁴⁵⁵ Essentially, bots are examples of computational aesthetics: their behaviour follows a method that through rules, constraints, and capacities for expression continually re-negotiates their structure and existence (Fazi and Fuller 2014). Their performative behaviour is obvious because they constantly do things, they act on each encounter they have.

The bots are conceptually very important for the game because they mimic the behaviour in social networks, where algorithms feed on information and feed information to visitors in mysterious (or at least non-visible) ways. In the game, there are several bots that all have specific tasks (Example 6.1). For example, as explained by Griffiths:

The dancebot just stands around liking objects that pass through the dance floor and telling people about it, and the job of the bot is to apply changes to the room (includes talking to people, picking up things or putting items of clothing on players) based on what is going on around it.⁴⁵⁶

```
(define (likebot-action entity graph node)
  ;; flip a coin
  (if (< (random 10) 5)
      ;; either - pick any object currently in the room
      ;; - it could be the bot itself
      (let ((obj (choose (pluto-node-entities node))))
          (pluto-say-to-random ;; we want to talk to anyone present
            ;; register our "like" for the object first
            (pluto-node-like node entity obj)
            entity
            ;; tell people we like it
            (string-append "I like " (entity-name obj) "!")))
        ;; or - ask a random player what they like
        (pluto-say-to-random node entity "Hey - What do you like?")))
```

Example 6.1 *Naked on Pluto*, the actions of dancerbots, code commented by Dave Griffiths.

The erratic behaviour of the bots is meant to confuse the player. At the same time, the player and his/her friends on Facebook influence the gameplay, and thus the behaviour of the bots. Moreover, players in the game can also team up and help each other to ‘outsmart’ the bots to move more quickly through the game. This entanglement, or circulation, of human and technical behaviour, is an example of performative cultures. In other words, the purposely followed logic of (perceived) loss of control, uncertainty and invisibility – as a reflection of how many algorithms function – are a result of the performativity of circulation. The bot system translates some of the (intentionally) invisible power structures and through the game play it provides the players with a renewed sense of control. Very

⁴⁵⁵ Hewitt (2006) wrote that ‘actors rise to the level of “Agenthood” when they competently use expressions of commitments expressing intention, dedication, judgment, decision, proposal, plan, contract, purpose, belief, policy, method, procedure, practice, backing, questioning, etc.’. Although the term agent is widely used by many people working in closely related areas, there is no single accepted definition (Wooldridge and Jennings 1995).

⁴⁵⁶ Personal e-mail correspondence with Dave Griffiths, 28 December 2012.

quickly it becomes apparent how Facebook's algorithms (and other platforms like it) function, how they (ab)use different data sets by relating them to other data and systems. Although in the case of Facebook the specific use of most algorithms remains a mystery, this type of analysis of coding mechanisms opens power relations by revealing, for example, how easily all kinds of information can be retrieved, linked and circulated. They also have the potential to develop a critique of how code on the Web works.

Another important difference from other online games is that the game construction tools of *Naked on Pluto* are implemented in the game interface. As Griffiths says, the way the game-engine functions is basically like live coding the game; as demonstrated in the project *Slub World* (2013), a live coding performance. In this instance, more live coding elements and sound are added to the game-engine and brought into a new context.⁴⁵⁷ Live coding (also known as 'on-the-fly coding') is particularly prevalent in computer music combining algorithmic composition with improvisation. Live coding is performed by a defined group of people, and sometimes audience members are invited to join. The process of writing is made visible by projecting the computer screen onto the audience space.⁴⁵⁸ So, how does live coding relate to performativity of circulation? Although it is beyond the scope of this research to go in depth on the practice of live coding, I will explain the performativity of live coding, in order to understand the relation to circulation.⁴⁵⁹ A difference between conventional music and live coding is that with the latter the music is written in real time in response to other members of the team.⁴⁶⁰ As McLean notes, a conventional music performance is structured as having a chorus and verse structures that begin and end with silence. Although the latter is also present in live coding performances, code can also end where it started, with nothing (2011:148). This means that in most cases the outcome is less important than the process. In a sense, it follows conventional software processes that 'are characterised in terms of cycles of development, with repeating patterns between milestones' (2011:148), the difference being that software development is usually goal oriented. Experiments with non-linear timelines are still in their infancy. Generally, to have timelines feedback on themselves (a process called backporting) is avoided, and only applied for security fixes in old software versions. Until now timelines are linear but they are 'twisted, knotted and transformed by patterning structures' (McLean 2013). In other words, in the practice of live coding, the activities are unstable and continuously changing, depending on the performers, the input of audience member, or the actions of the code itself.⁴⁶¹ Moreover, the writing, compiling and running of code is a set of interconnected actions. Or, as emphasised by Cox and McLean, 'saying words or running code or

⁴⁵⁷ The project is also developed with a different set of artists. *Slub World* is commissioned by Arnolfini in Bristol, UK in collaboration with Kunsthall Aarhus in Denmark. Slub is a live coding trio, consisting of Adrian Ward, Alex McLean and Dave Griffiths. For this project Slub is joined by Marloes de Valk, <http://project.arnolfini.org.uk/slub-world> (accessed 31 July 2013).

⁴⁵⁸ See among others, Collins et al. (2003), Wang and Cook (2004) and Alexander et al. (2004).

⁴⁵⁹ For an in-depth analysis of live coding, see Alex McLean's thesis *Artist-Programmers and Programming Languages for the Arts* (2011).

⁴⁶⁰ The link to improvisational music is the closest to live coding, but the difference is that audience members are also watching the writing of the code in real time.

⁴⁶¹ An example of feedback code to itself is *Feedback.pl* (2004), a text editor written by Alex McLean in which the algorithm running in *feedback.pl* can edit its source code. For more information, see Alexander (2004:250-1). For the source code of *feedback.pl* see: <http://www.cpan.org/authors/id/Y/YA/YAXU/perl-music-article/examples/feedback-0.1.pl> (accessed 1 August 2013).

simply understanding how they work is not enough in itself. What is important is the relation to the consequences of that action' (2013:38). Thus live coding is very much a circular process: 'the programme performs the music with the performer and vice versa, both relaying instructions and acting upon them' (Cox and McLean 2013:63). The practice of live coding coalesces the embodied skills of different programmers (in some cases also audience members) and the abstract specifications of the programming language.

This connection is strengthened by the visualisation/the presentation of the live code in front of the audience.⁴⁶² On the screen the audience sees the interface the performers are working with, as McLean says 'it's an opportunity for people to get a feel for the movement and complexity of what is happening inside our laptops at that moment'.⁴⁶³ This is similar to what the artists do in the presentation of *Naked on Pluto*; as described in the previous chapter. By projecting the interaction of bots they want to stimulate the connection between software (the bots) and what is experienced on the front-end of *Naked on Pluto* (or Facebook for that matter). It was an attempt to take the game externalisation to another level. One of the solutions was a real time projection of the game world; the unfiltered behind-the-scenes view of the game as seen by the bots as they attempt to keep track of what is going on.⁴⁶⁴ Inspired by live coding practices, they started with a 'scheme bricks representation' for JavaScript objects,⁴⁶⁵ but because the image became too large they focused on the objects and removed some of the information.⁴⁶⁶ By filtering the locations in the game, which means returning an object consisting of a list of names of things found at that location, they made the location diagrams smaller so that several locations could be projected in a circle (Figs. 5.13 and 6.9).⁴⁶⁷ Curved lines indicate some of the paths between locations. These 'translations' of the code and the process make the relations and interactions comprehensible. At the same time, they make material sensitive. By sensitive, I mean that software also deals with sensations and perceptions, in the sense, as described by Mackenzie, that it affects the way we are reading, looking and hearing (2006:172-173). Circulation happens between programmers/performers and code, then moves to the audience who can influence the code or the performers, to which they and/or the code responds.

In conclusion, it can be said that the game-engine becomes a complex circulating form from which other projects and contexts constantly spring off. A game-engine is code that performs, so could it be called a document? If it is a document, it is a document with performative qualities. It executes, acts, and reacts. But it is a complex document with kinks, folds, hiccups and slippages, which twist

⁴⁶² The projection of the live code is not uncontested. It could both include and exclude people who are not familiar with coding. The Slub performers stress that a projection should center around activation of the audience (McLean 2011:140-2).

⁴⁶³ Shulgin (2003) http://www.m-cult.org/read_me/text/alex_ade.htm (accessed August 2013).

⁴⁶⁴ <http://pluto.kuri.mu/2011/12/11/starting-work-on-a-live-world-projection/#more-836>.

⁴⁶⁵ Scheme Bricks is a way to live code Scheme visually by plugging in and tearing off pieces of code. For more information and examples see: <http://www.pawfal.org/dave/index.cgi?Projects/Scheme%20Bricks>.

⁴⁶⁶ The 'objects' are JavaScript objects. 'JavaScript is designed on a simple object-based paradigm. An object is a collection of properties, and a property is an association between a name and a value. A value of property can be a function, which is then known as the object's method. In addition to objects that are predefined in the browser, you can define your own objects'. https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Working_with_Objects (accessed 02 August 2013). The Java programming software is in itself very much based on circulation. For more information, see Mackenzie (2006:103-6).

⁴⁶⁷ The filters can be changed over time to include different information or process it in different ways. <http://pluto.kuri.mu/2011/12/11/starting-work-on-a-live-world-projection/#more-836>.

and fold in various directions, creating uncertainty and unpredictable behaviour. Moreover, the code is intertwined with the programmer(s), and/or the actions of visitors. Thus, performativity of code should be seen and understood in relations (or perhaps as the before mentioned ‘alliances’). At the same time, the game-engine is also a formally specifiable entity, a program, so it has a dual nature. In other words, to make sense of code as ‘document’ cannot be done without contextualisation. As understanding of such contexts evolves, thus actually changing the documents, it changes their meanings. Fuller notes, leaning on Deleuze’s concept of ‘casuistry of relation’, that ‘objects, processes, and media address themselves to other elements and dynamics. They are made graspable, nameable, and useable by certain forms of relation in which an understanding of their nature and their powers is inherent’ (2005:86-87). As such, software is part of a process that moves beyond mere execution. Cultural and social forms circulate through code and software, which in turn bring about new forms and forces.⁴⁶⁸ As more than performative (something that executes), it would be better to use the term processual, which in computing is described as a programme *in execution*.⁴⁶⁹ A process can be made up of multiple threads of execution that execute instructions concurrently. As such, it involves interactions between multiple paths that can breach out in different directions, which can be uncertain and ambiguous. A further advantage of the term ‘software processes’ over ‘software performances’ is that it also moves away from the close connection to Speech Act theory and its quest for seeking meaning and representation by means of semantics and psychology. Performativity as enactment of material that has a potential for meaning production, falls short in seeing material as a transfer or a conveyer of information. In short, being part of, generating, and affecting an ecology (for lack of a better term) ‘software processes’ account for material as an ideological and political space that grows, contracts or mutates as circumstances change.

6.2.3. Document as process, or process as document

In what way is it helpful to define processes as documents? From the above, it can be concluded that the function of a document needs to be stressed, rather than its physical form or medium. As Buckland suggests:

The algorithm for generating logarithms, like a mechanical educational toy, can be seen as a dynamic kind of document unlike ordinary paper documents, but still consistent with the etymological origins of “docu-ment”, a means of teaching - or, in effect, evidence, something from which one learns (1998).

Others have also argued that digital processes can be viewed as documents. For example, Windfeld Lund, continuing from Buckland, says that:

⁴⁶⁸ As McKenzie also acknowledges the inseparability of code as form and code as force is not unique to software, but it is certainly heightened by the clustered social relations it attracts (2006:178).

⁴⁶⁹ For more information, see Silberschatz et al. (2010:103-43).

Within a conceptual framework of document and documentation process in which all agents, media, and modes involved in human communication are recognized on equal terms in principle, it may be possible to study how the complexes of agents, media, and modes in practice are interacting with each other and thus how material, social, and cultural options and conditions have an impact on the resulting documents (2010:746).⁴⁷⁰

However, all of the attempts depart from the idea that there is a final document. But what happens when there is no final end or outcome, when the process is the start, the middle, the end, and the unknown future? How do you define a document that may have fixed properties but is also constituted through technical, social and cultural matter and processes? To further define the characteristics of documents and the relation to processes requires more research and deliberations. Such discussions are bound to be far from fixed and as time goes by they will continue to change. To paraphrase Fuller and Goriunova (2012:170), such deliberations need to allow a close reading, a way of working with things that are materially rich but not cumbersomely materialised, a proximity that requires the taking of a distance sufficient to allow for the document to form and give itself over without turning itself in.

Finally, how could the concepts of performative circulation and processes help with the conservation of net art? As mentioned in Chapter 2, there is a growing understanding in conservation that conservators are ‘doing’ work. They execute a work based on a comparison of the original presentation and its successions, thus emphasising the performative and interpretive roles conservators play.⁴⁷¹ At the same time, the notion that digital material is persistently and fundamentally material is recognised.⁴⁷² Both of these approaches are useful in that they point to the basic characteristics of (the handling of) computational material, but they still depart from the question of what the material is, instead of addressing what it *does* or how it *functions*. My emphasis on the processual dimensions of materiality is meant to extend, rather than replace, these understandings. This means that what something *is* has to be understood in terms of what it *does*: how it functions *within* and *through* machinic, systemic, social and cultural domains. A thorough understanding of these relations is important especially because computation is often invisible, and as anthropologist Daniel Miller notes:

The less we are aware of [objects], the more powerfully they can determine our expectations by setting the scene and ensuring normative behaviour, without being open to challenge. They determine what takes place to the extent that we are unconscious of their capacity to do so (2005:5).

With processes being the work, or seeing the work as a process, Van de Vall suggests a third paradigm in conservation. The first is centred around scientific conservation (or the autographic paradigm) and the second, leaning on Laurenson (2006), on performance and performative

⁴⁷⁰ See, among others, Renear and Dubin (2003), and Pédaque (2003).

⁴⁷¹ See, for example, Laurenson (2006); Ippolito (2008); Van Saaze (2009).

⁴⁷² Although others have also made this statement, the writing of Kirschenbaum (2008) has been particularly meticulous, leaning on the dictum of French investigator in forensic science Edmond Locard, Kirschenbaum states that ‘every contact leaves a trace’ (2008:25-71). His argument is organised around two aspects of materiality: forensic and formal. The former refers to evidence (physical traces), and the latter to the codes and structures of the material (organisation and composition).

behaviour.⁴⁷³ According to Van de Vall, in this third processual paradigm,

the process is assumed to be the core of the work and the main aim of conservation is support of the work's continuation through transmission of the required information, skills and procedures to the designated participants or stakeholders (2014).

Artworks in this category are characterised as open-ended, in continuous development, or part of the development of the work is outsourced (either by technical or natural processes, or users). Van de Vall positions this against the performative paradigm, which she applies to artworks that are based on a set of instructions, or notations, in which

the core of the work is considered to consist in its concept, which should be realized through the faithful performance of a set of instructions stipulating the features defining the works identity (2014)

She elaborates that for artworks that fall into the performance paradigm a conservator would be required to return to the instructions, whereas a processual artwork evolves from one stage to the next (2014). For the latter, Van de Vall uses the analogy of improvised music and stresses that it is not a matter of one paradigm substituting for another, but that these approaches can be seen to work in parallel and even at times intermingle. Most importantly, the different paradigms require different approaches. Whereas performative artworks are based on detailed instructions that can be executed by (museum) professionals, processual artworks are meant to continue, develop or just disappear, rather than be preserved or re-created, which according to Van de Vall can also take place outside the museum.⁴⁷⁴

My conclusions seem to support the division between performative and processual artworks, as well as the consequences they entail. However, as Van de Vall also concludes, it remains to be seen if such a clear separation is tenable when discussing conservation, or documentation, strategies. For example, are the 'rules of the games' (sending something out into the world and letting it evolve) the same as a 'set of instructions' (there is a margin of variability, but not everything goes)?⁴⁷⁵ In most cases, there will always be some kind of restriction.⁴⁷⁶ For example, through the set up of the artwork, as in the case of *mouchette.org*, most parts are linked or kept together by the main website, and the participants are encouraged to remain within the domain. The game-engine of *Naked on Pluto* acts in such a way that it is processual, because the game-engine is generative. But the game itself is only partly so. The rules of the game are pretty fixed and not everything goes.⁴⁷⁷ The performances of *Slub*

⁴⁷³ Renée van de Vall, 'Documenting Dilemmas. On the Relevance of Ethically Ambiguous Cases', keynote lecture at *Performing Documentation in the Conservation of Contemporary Art*, Lisbon 20-1 June 2013.

⁴⁷⁴ In a similar vein, Bosma argues that in these cases conservation can only take place through a loss of control (2011:166).

⁴⁷⁵ The term instructions is used by Laurenson to describe performative artworks. Following Stephen Davies she argues that a 'notation has the function of specifying works. A score is intended as instructions to potential performers and it is by following these instructions that players generate instances of the work' (2006).

⁴⁷⁶ Generative artworks can be seen as the exception. For more information, see <http://www.medienkunstnetz.de/themes/generative-tools/generative-art/>.

⁴⁷⁷ What exactly defines generative art is still being discussed. Most of these discussions center around the human influence on the

World are probably the closest to the characteristics of a processual paradigm. As McLean describes:

In live coding the performance is the process of software development, rather than its outcome. The work is not generated by a finished program, but through its journey of development from nothing to a complex algorithm, generating continuously changing musical or visual form along the way (2011:130).

Nevertheless, the software programme that is used is a formally specifiable entity. In other words, as mentioned before, these works are dual in nature: some elements are fixed, while others are processual. Likewise, most biological materials are processual, causing artworks that use these materials to evolve due to the weather, germs, or moulding, without it being intentional or part of the concept of the work. And in cases when ‘process’ was the core of the work. For example, many of the earlier mentioned examples of process art, land art, or the well-known example of Joseph Beuys who is known to use particular fabric that would deteriorate over time, the conservation strategy has been far from processual. There are, of course, many reasons for trying to preserve these artworks. Whereas the concept of a processual paradigm is not necessarily new, more importantly through naming and defining a new paradigm, a conservation practice may start to change its course.

In summary, the logics in artworks can be analytically different, which is important for understanding and analysing a work, but most artworks have a dual nature: they consist of performative and processual elements. It seems obvious that with processual works, conservation in the strictest sense will not be possible. The same could be argued for many performative artworks. In both cases, documentation plays a more important role than the reconstruction of the artwork. As outlined in Chapter 4, this includes documentation of the development process, presentations, and for re-creation. To come to grips with the mechanisms of computation, a critical reflection has to include analysis of historical and contextual information.⁴⁷⁸ To understand and reflect on the evolution and the political dimensions inherent in computation, it is important to study those processes, their behaviour, how they function, and how they are embedded in, and influenced by, social, cultural and technical contexts. Such an approach guides conservators – or others involved in the longevity of an artwork – to answer what the material is, what the intention of the artist(s) was, and find ways to capture, restore, document, or continue net art. Moreover, sharing and opening up ethical discussions facilitates decision-making processes. Such transparency simultaneously creates a body of professional experiences that can guide future practices. Instead of standardisation, such a practice centers on variability and leads to multiplicity.

programme. See, among others, Galanter (2003) and Mclean (2011:16-7, 115-27).

⁴⁷⁸ Such approaches are found in fields such as information science, social science and software studies. For more information, see among others Fuller (2008) who argues for a historical approach of software (and computing) instead of regarding it as being in a constant state of improvement; Mackenzie (2010) explains how the material constraints of computing are intimately registered within our perceptual systems; and Blanchette (2011) uses the concept of ‘distributed materiality’ to describe the co-dependent, layered contingencies on which the functions of drive, storage, software, hardware, systems, and networks depend. How these are locked into relations with each other, which are governed by their material design and constraints in ways that have an effect on the costs and efficient operation of the system.

7. Conclusion

‘Igor !!!!! Can’t you do something else to go through your mid-life crisis ??? ?!!!!’⁴⁷⁹ This exclamation was one of the responses to net artist Igor Stromajer’s post on Facebook that he was deleting his collection of online net artworks. *Expunction* (2011), the name of the project, was where one could follow the process of all the deletions, byte by byte. All that remains are the debates that took place on various platforms and documentation of Stromajer’s net artworks from 1996 to 2007. In the debate Stromajer hinted at several reasons for his (drastic) measure

To be honest, most of the projects I’m talking about, are nowadays appearing totally different in browsers, as they were in originals. Some of them you can’t even see/experience anymore. I was doing updates all these years, reprogramming, updating etc. But now it makes no sense anymore. (...) they are disappearing/dying anyway. So, it’s better if I ritually delete (and document) them. Because it makes no sense for the audience to watch/browse “damaged” works, to watch/browse something I didn’t actually do.⁴⁸⁰

Much has been said in this dissertation about the ways artists and museums are trying to document or conserve net art. In spite of all these efforts, the reality is that many net artworks have already been deleted by their creators (as Stromajer’s example shows), are dysfunctional due to out-dated software and network changes, or are unable to perform because of incomplete hardware or hardware that has become obsolete. As I have emphasised in this thesis, to depart from a museum’s perspective when talking about caretaking is significant because museums are where art conservation began and where its practices have developed. However, as I showed throughout, this ‘authorial’ position may change as more and more specialised organisations, artists, and the public started to document and conserve artworks.

The aim of this dissertation was to explore the qualities and characteristics of the materiality of net art and the influence it may have on conservation practices. Net art is not a fixed object or entity, but a process that is formal and contingent, functioning through systems, designs and histories, and influenced by and executed through other processes and/or users. It also operates through networks, using relationships among people. This includes technology, but it is not confined to it. It is foremost about seeing systems and situations as a medium. These processes and networks are furthermore imbued with ambiguity. Taking place in (technical) executions, ambiguity is strategically used to create suspense, obfuscate existing systems and disrupt power structures. Adding to these qualities are the quick obsolescence of hard- and software; the fact that knowledge and expertise is distributed through (un)professionalised communities; that many net artworks are created with(in) restricted platforms or are based on open source ideologies (which means that parts are freely shared

⁴⁷⁹ Annick Bureaud, <https://www.facebook.com/intima/posts/144916102244400> (accessed 21 April 2011).

⁴⁸⁰ Igor Stromajer, <http://expunction.wordpress.com/2011/04/25/fb-debate-2/> (accessed 23 April 2011).

and used); and lastly, that net artworks often act, or are, assemblages that (sometimes deliberately) change or mutate, makes net art a challenging case for conservation.

7.1. From a single conservation practice to networks of care

Variability is one of the key terms in this thesis, and it is used to describe the acceptable levels of change that can be made within or to an artwork without diluting its meaning. Throughout history, various extreme views in conservation treatment can be traced in debates over the acceptable levels of change and the methods that were used. Despite shifting artists' practices, from making paintings and single objects to using a multitude of (sometimes unstable) materials, conservation practices have been slow to respond to these changes. Whilst conceptual artworks that came to prominence in the early 20th Century already challenged the conventional conservation methods, with the introduction of time-based media artworks, which use technologies that can quickly become obsolete, the first steps were made to seriously consider the consequences of variability in conservation. Similar to many time-based media artworks, in net artworks technical and aesthetic elements are deeply entangled. The case studies discussed in this thesis highlight that attempts to conserve net art need to follow a combination of different approaches, including material and contextual analysis, interviews with artists and others involved in the process, and regular team meetings. In these meetings various aspects of the artwork and the methods are discussed between people from different disciplines and departments in the museums, and when needed additional expertise from outside the museum should be brought in.

As I have shown in Chapter 3, the technical elements of many net artworks can be conserved, either through emulation methods or by sensitively redoing the hard- and software (following media archaeological approaches). However, such attempts may fail to capture the essence of the artwork: mistaking technical failures for what they are; neglecting the temporary condition and value of the work (changing conditions can render a work meaningless); or, disregarding the 'open ideology' of the work amongst numerous other misrecognitions. After 'treatment', the artwork can easily turn into a nostalgic relic of a past time: emphasising the technical over the conceptual parts of the artwork. A further complication is in the means to recognise and 'conserve' the multiplicity of authors who participate in the development of an artwork. At the same time, these different authors could be one of the solutions for the prolongation and longevity of the artwork. Such a 'network of care' brings in knowledge from different fields and backgrounds and functions through a combination of experts and non-specialists. Although the underlying structures, their formation, the different roles and responsibilities of such networks as well as their sustainability requires more research, it can already be seen that such networks can operate without the structures of centralised archives and authorised custodians. When acknowledging the distributed character of many net artworks, its 'social life', and how it emerges through networks and processes – i.e. valuing the incompleteness of net artworks –

conservation is less about conserving materials and more about the preservation of social information and relations.

7.2. Changes in conservation: from emphasising documentation to following an open approach

Another solution I proposed in this thesis is to focus on the documentation of net art as an important conservation method. Documentation is already an important guide in conservation treatments: wherein a manual, or a model, questionnaire, interview, graphics, photos, videos, and texts may be used to understand the creation and biography of the work. However, documentation is often regarded as being of secondary importance to the artwork. As I have argued in Chapter 4, net artworks are technically complex, not only in their final presentation but also in their production phase. For recreation it is therefore important to comprehend the choices that are made and the context in which they were made. In other words, it is important to recognise that knowledge and meaning emerges *through* the artwork, rather than being held within the artwork. Using and studying, what I have termed *documentation as process* (documentation that reflects the decisions that are made during the development) yields a better understanding of the inherent qualities of an artwork. Sometimes documentation that is created about an artwork can communicate more about the work and how it is experienced than its physical manifestation. Besides its representational qualities such *documentation as presentation* can also function as a form of dialogue, response and reflection. Whereas such documentation potentially edges towards an inscription into (art) history, it may also deepen the conceptual ideas of the work in new and unforeseen ways. Similarly, using documentation models as *documentation for recreation*, has in some cases led to new insights. Moreover, when placed in another context, a documentation model can be seen as a boundary object and a variable tool that stimulates sharing, dialogue and potential development.

Such a different emphasis on conservation in which documentation practices are valued over other conservation methods, shifts the roles and responsibilities between conservators (who take care of an artwork after its realisation) and curators (who are involved in creation and documentation processes). This shift opens new ways of thinking about what conservation means, as well it will require new ways of dealing with the structure and function of the museum. Whilst the consequences of such a shift needs further research, in Chapter 5 I showed how the use of open source practices further complicates and affects the current structures and functions of museums. With artworks that can be freely copied, used, presented and distributed by everyone several challenges arise for a museum. While in general open source helps the conservator to more easily access the different elements of an artwork, when other people can use and change the artwork the conceptual and economic value of an artwork changes. It changes the question of what an artwork *is* to what an artwork *does*. Rather than seeing this as a problem, following artists' strategies, I propose to reverse the acquisition process. The museum does not acquire a 'final' artwork, but is financially, and perhaps

conceptually, involved in the development of an artwork. Instead of trying to fix an artwork as much as possible, providing boundaries, or guidelines, of past, present and ideal states of the artwork in which construction and execution are stitched together to create a moment in time, when following an ‘open approach’ the museum becomes also a facilitator of development and processes.

7.3. Reconsidering fundamental terms: authenticity and documents

The question of whether and, if so, how, such new *modi operandi* in conservation will affect existing structures, systems and more traditional artworks, calls for further research. In the final chapter I made a first attempt to open such discourses and ways of thinking. Taking the well-known and used concept of authenticity for identifying value and meaning in artwork, I explored its value and meaning in net art. Expanding the multiple descriptions of the term, I argue for a broadening of authenticity by connecting it to ‘alliances’. With the term ‘authentic alliances’ I emphasise the importance of seeing seemingly different and incommensurate parts as a whole. Although the most common used identifiers for authenticity (what the work consist of, who is the author and when is it made) do not necessarily give an indication of authenticity in net art, it is in the alliances inside and between these concepts that authenticity can be identified. This emphasises the layered nature of these artworks, and that different elements should not be identified as singular entities, but as influencing each other. In other words, whilst independent elements can change it is in their execution – inbetween a and b – that an authenticity of alliances can be traced. This is not saying that questions about the work, authorship and date of an artwork are irrelevant, but that there is a shift of focus to those which prioritise questions about ownership, authorship and copyright.

At the same time, the concept of alliances requires a reconsideration of Goodman’s (1976) distinction between autographic and allographic, and Benjamin’s (1969[1936]) concept of the aura. Whereas according to Goodman, code (as notation) is allographic because it is executed, in its specific use, code is also autographic. Moreover, for artworks that deal with iteration, versioning and repetition, the binary division between original and copy makes little sense. Such artworks are instances in a line of other artworks. It is through the network that meaning and value are derived. Thus, reproduction can still have aura and originality is identified through copying. Again, authenticity cannot be found in singularity, nor should it be used to enforce a binary opposition, but it can be identified in the ongoing dialogue between the open-ended work and its multiple producers. Traditional categories of author, human and machine agencies, the singularity of the object and the functionality of date explode in net art, but at the same time they open new ways of looking at authenticity.

Similarly, the construction of net art challenges the question of what a document is in a networked and processual environment. Whereas Manovich (2013) prefers to talk about software performances instead of fixed documents, I argue by analysing the behaviour of net art that such a

strict division is difficult to sustain. Rather than looking at the physical form or medium, the function of a document should be emphasised. More than the performative (something that executes) I want to stress the processual qualities (something that is *in* execution) of software. At the same time, net art both consists of fixed properties and is constituted through technical, social and cultural matter and processes that keep changing. Although the characteristics of documents and the relation to processes requires more research and deliberations, my analysis clearly demonstrate that conservators should address the paradox inherent in net art (being both fixed and fluid) by looking at what an artwork *does* or how it *functions*, rather than what it *is*. Such a practice of attending to performativity rather than category centres on variability that leads to multiplicity.

7.4. A future of net art conservation

I started this thesis by describing three of the main characteristics of net art, that it is networked, processual and ambiguous. Throughout the research these terms have surfaced, constantly affirming their power and their potential for discussing the futures of net art. Whereas this research attempted to carefully construct what such futures of net art could be and in the process analysed the construction of net art by critically reflecting on specific assumptions, such as the value of authenticity and documents in a computational age, net artists are not necessarily interested in such a future perspective (as clearly exemplified by Stromajer). Many artists want to create a set of relationships and processes, from the mode of production via distribution to reception and back again. A cycle emerges that can continue potentially forever. Importantly, the idea of cycles does not necessarily include constant progress. Rather, it emphasises that development time also allows for return and revision. This shifts the perception from representations of objects to interpretation of their forms, flows and flaws. Working with relations and processes also emphasises the end of a single author, in favour of a collaborative process that, by allowing for hybridity and complexity to play out within new aesthetic practices, opens possibilities for new social structures or tactical behaviours. However, in some cases, such as *communal* authorship, it does not suffice to describe a process that favours development and (dis)continuation over collaboration. Here, one author is dependent on another, not for collaboration but to continue a process. Instead of claiming single or collaborative authorship, such practices signal that questions of authorship are less relevant than the drive to continue a process.

Dissolving notions of single authorship, (final) objects and continuous time, net art challenges – albeit not always on purpose – the current, canonised foundations of art: the identity of the artists and their work, the meaning and significance of the work, and its interpretation. This is not to say that such foundations are not important anymore. Paradoxically, the dissolution of existing categories and foundations provide the basis for an expansion of notions such as authenticity. With a growing understanding that conservators are ‘doing’ work, emphasising the performative and interpretive roles conservators play, and the recognition that the computational is persistently and fundamentally

material, the question of what net art is and how it will influence conservation can be answered by looking at what it *does*: how it functions *within* and *through* machinic, systemic, social and cultural domains. Such understanding demands knowledge and expertise from diverse backgrounds. For a conservator, this means becoming part of a ‘network of care’ in which a collaborative approach is important to comprehend the complexities of net art. Whereas this will affect the role of the conservator, the direction and the specific kind of change depends on the situation and project. An important question remains: when taking these changes into account, can we still talk about conservation? The answer to this question lies in the future – but surely with regard to net art – conservation needs to be re-thought.

7.5. Recommendations for future research

In this thesis I have worked around a particular set of case studies, clearly not all artworks, or artists for that matter, will present the same challenges or share the same perspectives. Whilst I choose the case studies based on their paradigmatic challenges, it was not my intention to universalise the outcomes. To test my arguments more research needs to follow by which various case studies can be compared and more general recommendations can be made. Alongside a call for more case study based research, several other lines of thinking and research would be worthwhile to develop in light of a changing conservation practice:

1. A rethinking of authorship, ownership and copyright

In Chapter 6 I looked at the notion of authenticity to provide insight into the intertwined elements of net art, which may help to inform the conservation of net artworks. Whilst I concluded that common identifiers of authenticity such as the material, the author, and the dating of a work explode in net art, they also open to new ways of looking at authenticity. It is not unusual that with the introduction of new (technological) inventions a rethinking of established ways of understanding previous practices takes place. It could be argued, that my way of challenging the notion of authenticity was a mode of negotiation, allowing conventional assumptions to be brought under scrutiny. At the same time, such a revisiting of some of the identifiers of authenticity, offered an exploration of other traditional notions such as authorship, ownership and copyright, which, in the context of the computational, likewise need to be rethought. For example, in the case of ownership, the emphasis shifts from the traditional economic entanglement between the museum and the art markets, to the question of what it means to own something that can be owned by everyone? Similarly, what are the implications of multiple (sometimes difficult to define) authors? Or, how to handle evolving processes that time-and-again ‘create’ new authors? These strategies have the potential to defy the power of the art markets and their traditional economic models. However, unlike some previous artists’ attempts to distort existing hegemonies, not all net artists are intentionally subversive, their attitude and method is often

foremostly driven by their practice and by the technology they use. Seen in this way, these changes may entail wider implications that move beyond cultural practices and extend to social practices and economic models.

2. Networks of care, theory and practice

Similarly, the proposition of ‘networks of care’ calls for additional research into the construction, functioning and affects of care and networks. It could be argued that a conservator is foremostly a caretaker, not solely as in taking care of precious objects, but also taking care of the skills and techniques of caring. Such caring is influenced by material conditions and, as I have argued, takes place through alliances and being part of socially organised systems. In the context of net art, these different sides of care coincide. However, in conservation such practices are currently not explicitly recognised or framed as such. To emphasise the value of the technological culture of net art in other practices, a better understanding is needed of the underlying, but omnipresent, structures that support networks of care. Such research easily expands beyond art and culture, into other practices (from social sciences to information science and network studies) to see how different element and entities influence each other, how networks are articulated and evolve, what the different stages of (technological) development are, what the impact is of changes from inside and outside influences, whether networks are dependent on specific structures or formations, and what kind of systems support or obstruct the evolution of networks? Moreover, in what way could a theory of networks benefit from the concept of the assemblage through which, for example, the structures and alliances of, and between, (emergent) properties can be analysed? These and similar questions can gain from insights in network theories, philosophy and software studies. The outcomes are helpful for conservation (as well as the museum at large) to decide on which methods to use and how to handle seemingly fragmented artworks. Examples of such ‘networks of care’ can already be found around some (public) art projects, but they are more developed within gaming, experimental sound art and underground film cultures. In particular, gaming communities have been one of the first to collectively preserve analogue and digital games. These ‘amateur’ practices have already led to excellent effects and can serve as rich points of departure for further research.

3. The role and organisation of the museum

This thesis addresses net art’s survival and whether it requires a specific kind of conservation practice. Among others, I argued that net art’s conservation should focus on the development and maintenance of the future of the work, rather than on a conservation of past events. This may entail both a loss in the sense of losing parts of the works, as well as a loss of authority and control by giving agency to, and creating alliances with, others, most likely to those (from humans to non-humans) outside of the museum’s structures and reach. Although the outcome is that a reconsideration of conservation is needed, and that such a change will impact traditional methods and practices, my research does not

address the implications of such potential changes for museum practices, nor its organisation, in much detail. It seems obvious that ways of collecting, presenting or simply registering an artwork in a database, will change when net artwork and similar artworks are acquired (in whatever way), however, the impact of these changes calls for more research. For example, how will such a new *modus operandi* affect other more traditional works of art? One of my propositions is that the relation between the conservation and the curatorial departments will be affected in particular. I argue that conservation of net art might turn into a curatorial challenge, and that the conservation department may become a facilitator of process and development. Whilst this may sound futuristic, small shifts in practices are already currently taking place: from commissioning artists to make reinterpretations of existing works, to openly discussing the limitations of existing conservation strategies, and by inviting communities from other fields of interests and expertise into the museum. These changes deserve close attention as they will undoubtedly carry wider consequences for the role, the organisation, and potentially the function, of the museum.

Appendixes

List of Illustrations

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1. Net art
2. Conservation: moving towards variability
3. Conserving variability: *mouchette.org*
4. Documenting variability
5. The value of openness
6. Embracing variability and process

Illustrations

Introduction

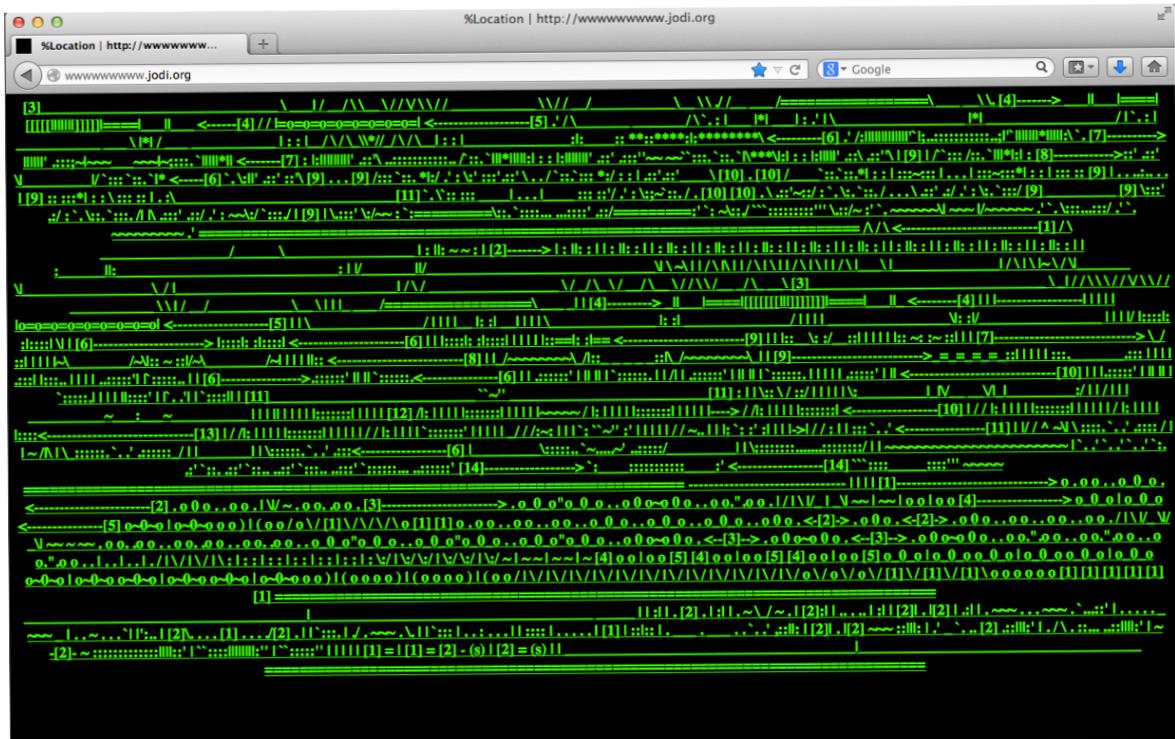


Fig. 0.1 JODI website <http://www.jodi.org/> (1993), screenshot June 2014.



Fig. 0.2 JODI, *Jet Set Willy FOREVER* (2010), at the exhibition *Funware* at MU in Eindhoven, 12 November 2010 – 16 January 2011 (photo by Boudewijn Bollmann).



Fig. 0.3 Ibid.

1. Net art

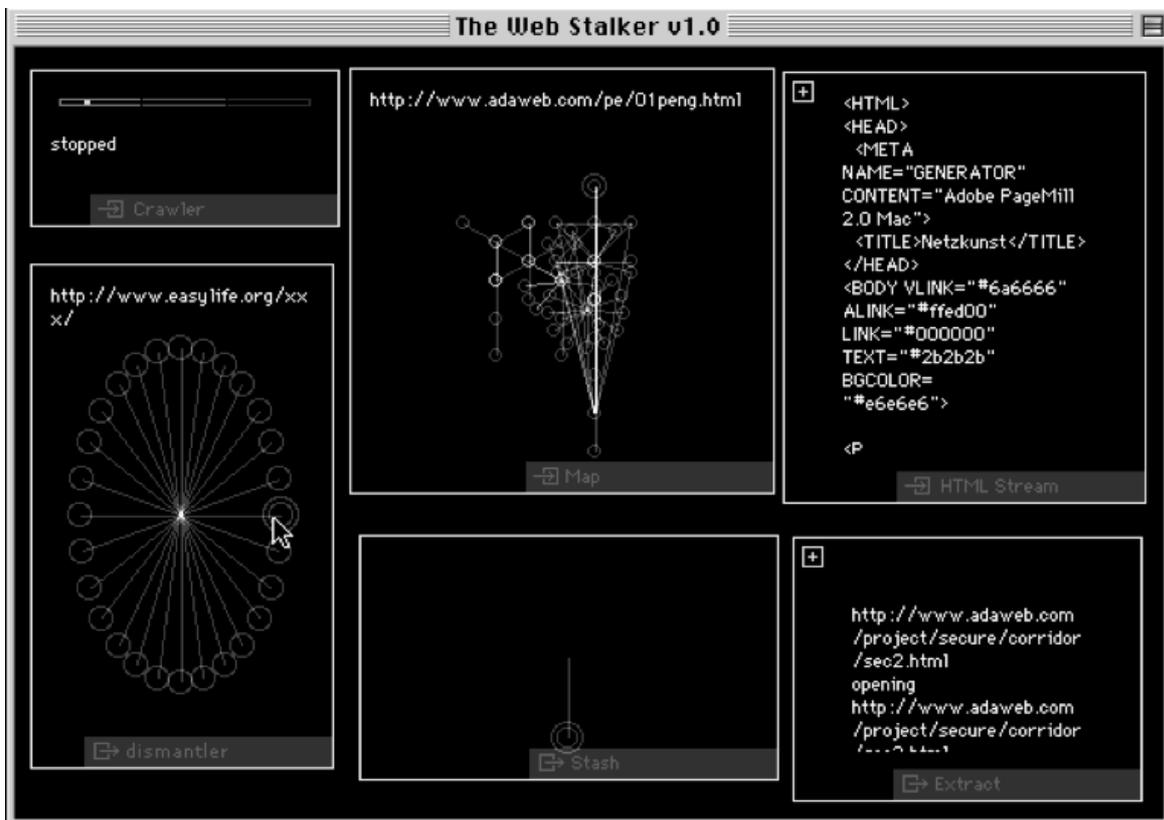


Fig. 1.1 I/O/D *The Web Stalker* (1997), screenshot. Retrieved from <http://www.tacticalmediafiles.net/> June 2014.



Fig. 1.2 Olia Lialina, *Summer* (2013), screenshot June 2014.

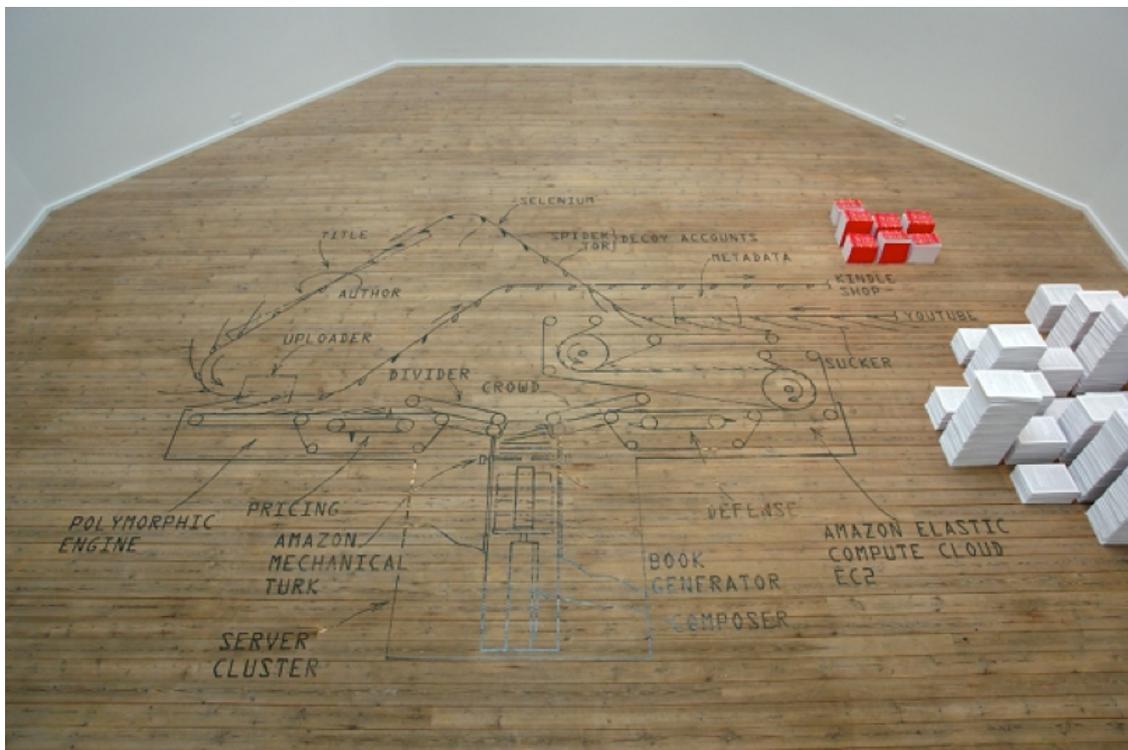


Fig. 1.3 Übermorgen *The Project Formerly Known as Kindle Forkbomb* (2013), at the exhibition *Systemics #2: As we may think (or, the next world library)*, Kunsthal Aarhus, 21 September – 31 December 2013.

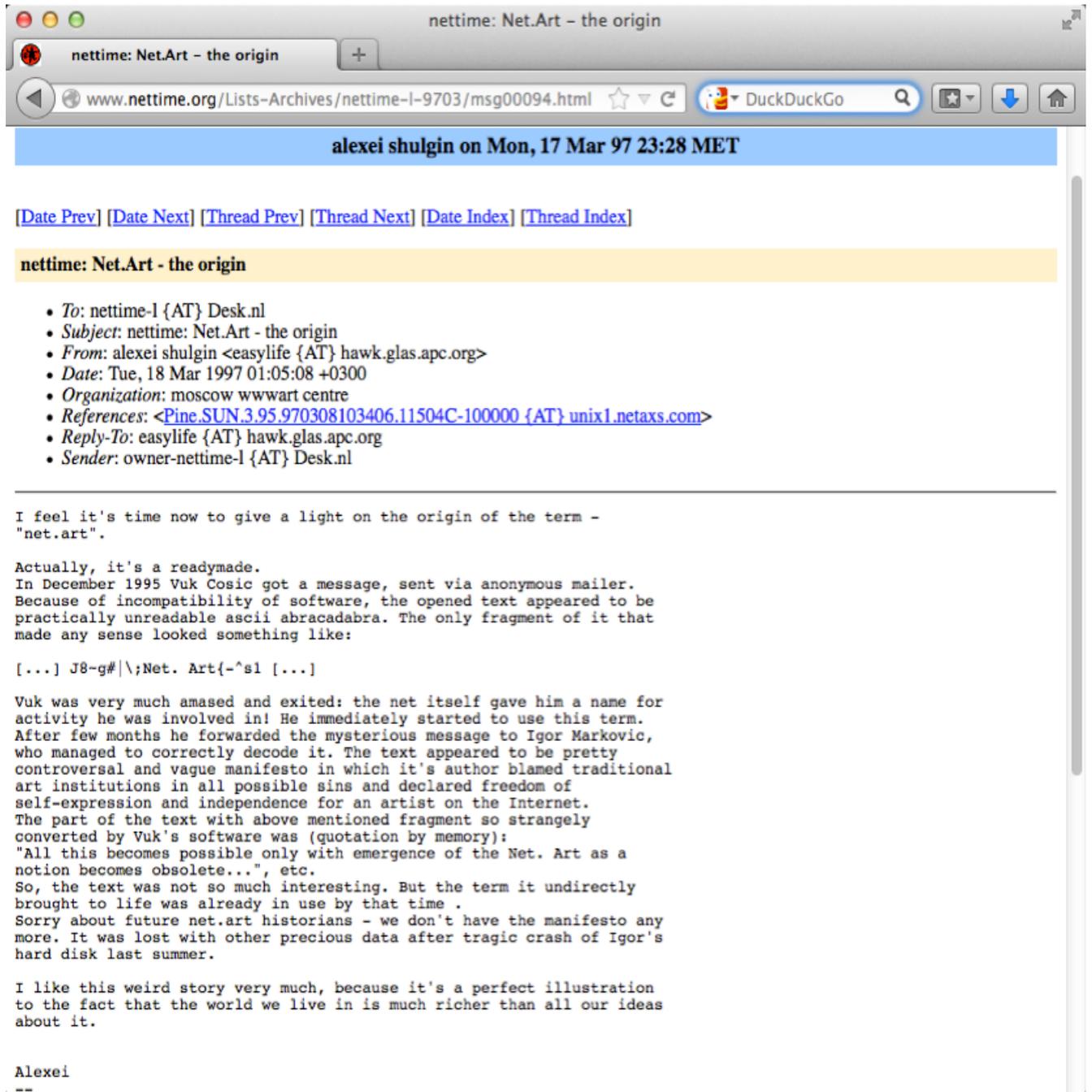


Fig. 1.4 Alexei Shulgin, Net.Art – the origin, *Nettime-I*, 18 March 1997, <http://www.nettime.org/Lists-Archives/nettime-l-9703/msg00094.html>, screenshot June 2014.

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<html><title> %Location | http://wwwwwwwww.jodi.org </title>
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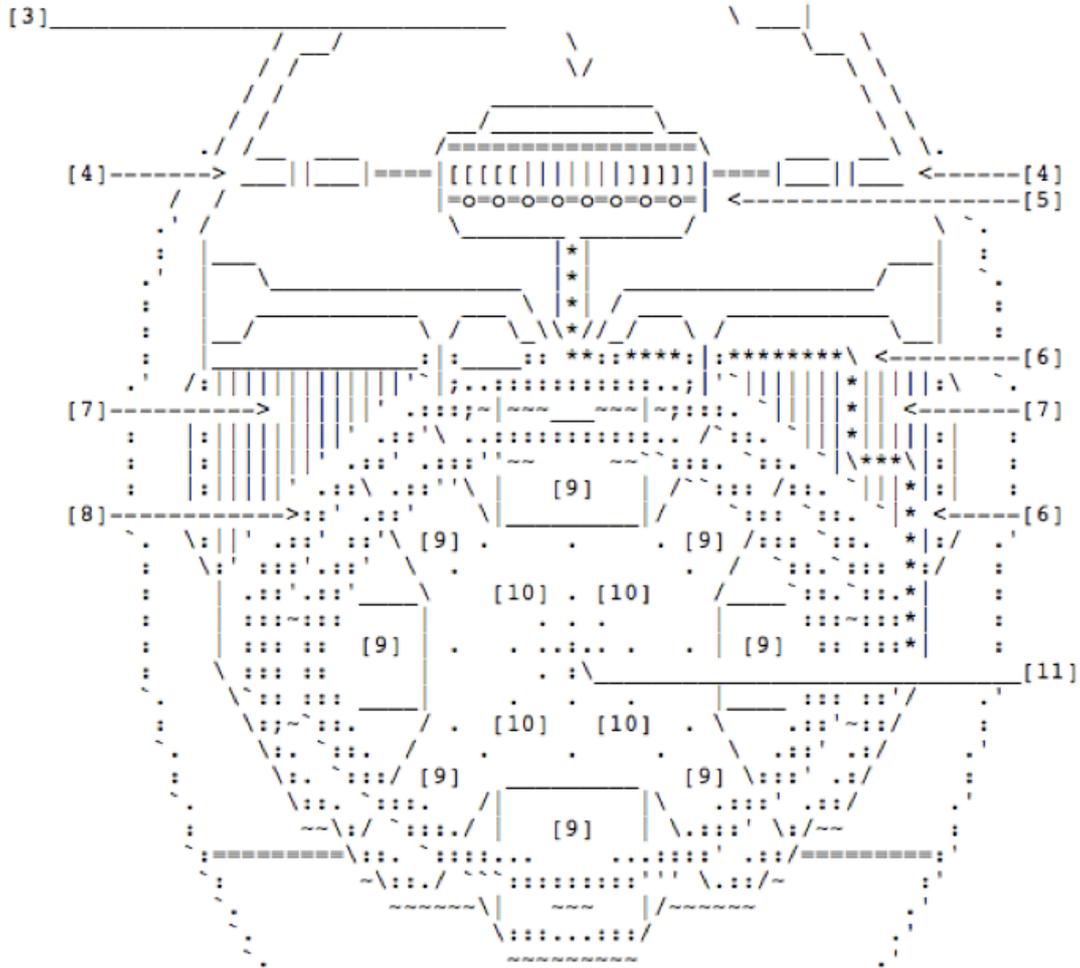


Fig. 1.5 JODI, <http://wwwwwwwww.jodi.org/> (1993), screenshot (source page) June 2014.

2. Conservation: moving towards variability

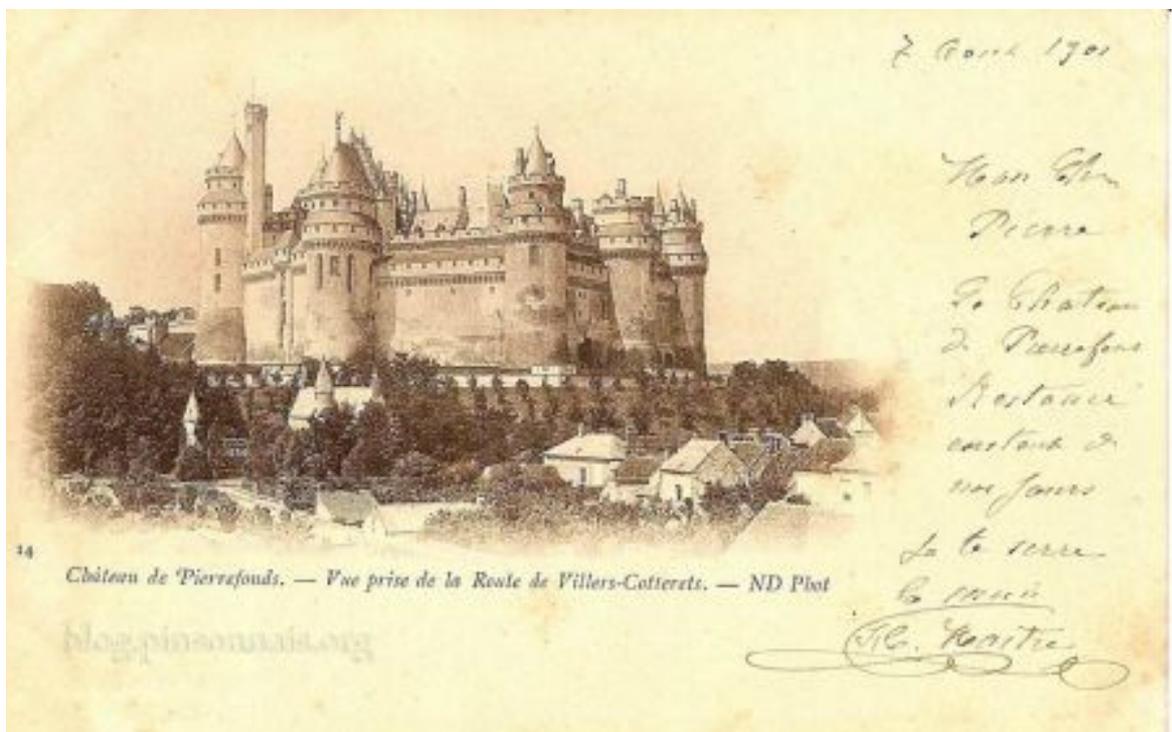
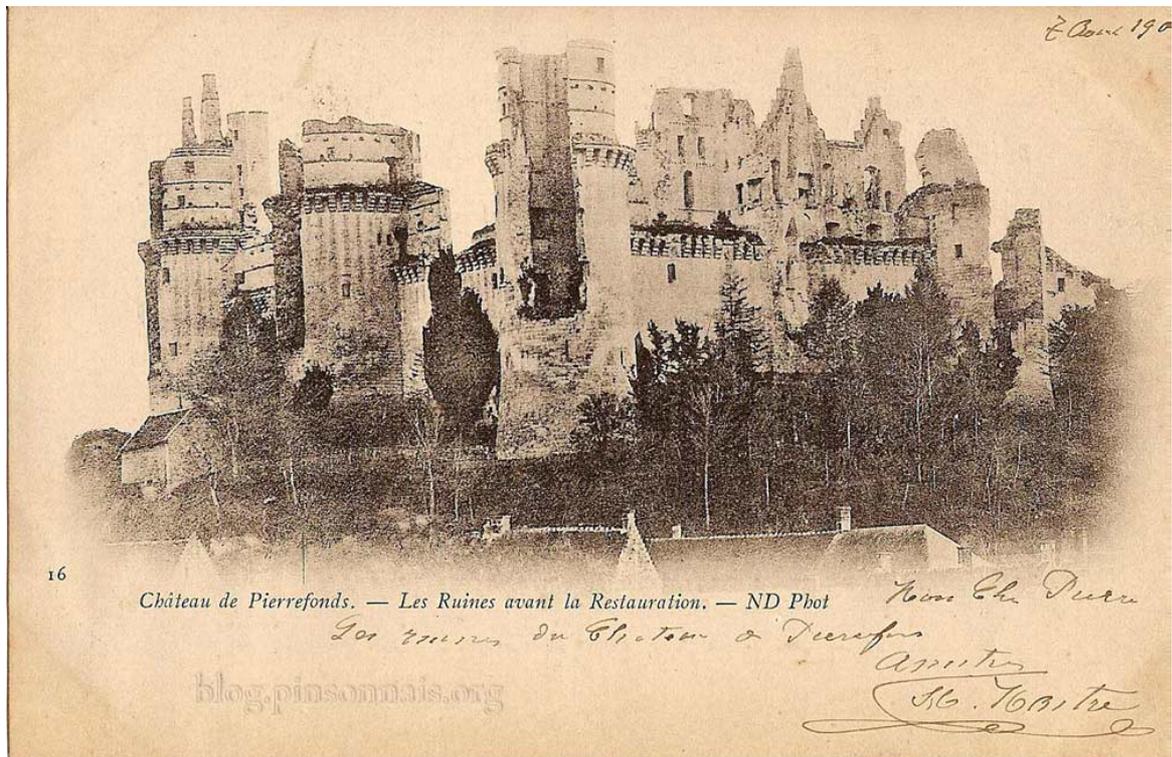


Fig. 2.1 Carcassonne before and after the restoration. The top photo was taken before 1860, the bottom one after reconstruction between 1890-1900.

Source: <http://blog.pinonnais.org/post/2009/04/06/Une-restauration-de-Viollet-le-Duc>.

3. Conserving variability: *mouchette.org*



Fig. 3.1 SKOR, De Inkiijk, *Guerrilla Fanshop*,
6 July - 26 August 2011.



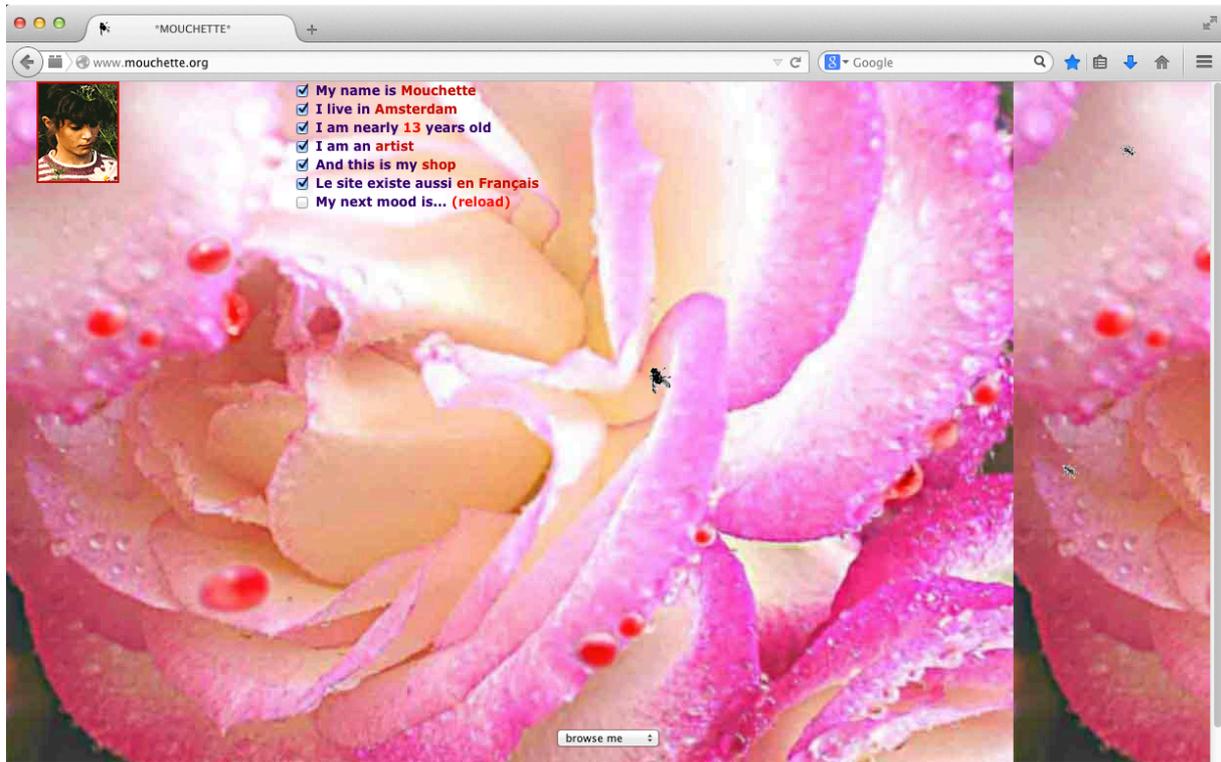


Fig. 3.2 Martine Neddam, *mouchette.org* (1997), screenshot June 2014.



Fig. 3.3 Presentation of Mouchette by Peter Luining at De Balie in Amsterdam, December 2001. Screenshot <http://about.mouchette.org/this-was-mouchette/>, June 2014.



Fig. 3.4 Selection of Mouchette's objects

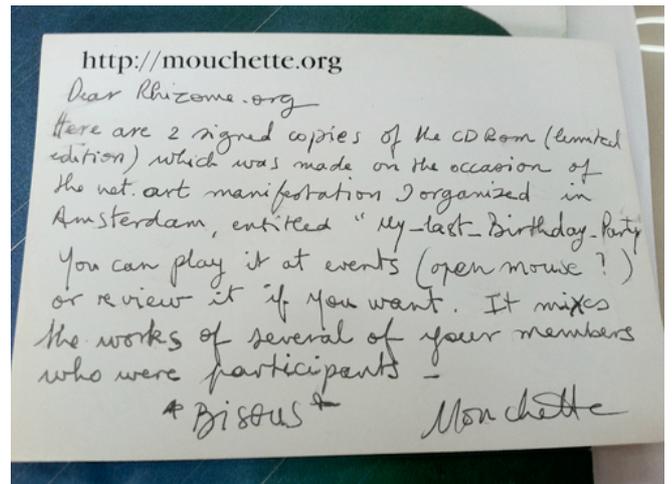


Fig. 3.5 A handwritten postcard of Mouchette. Found in Rhizome's archive, 27 September 2011.



Fig. 3.6
David Link,
LoveLetters_1.0
– the typewriter,
at the exhibition
*Fun with
Software*,
Arnolfini,
Bristol,
25 September –
21 November
2010.

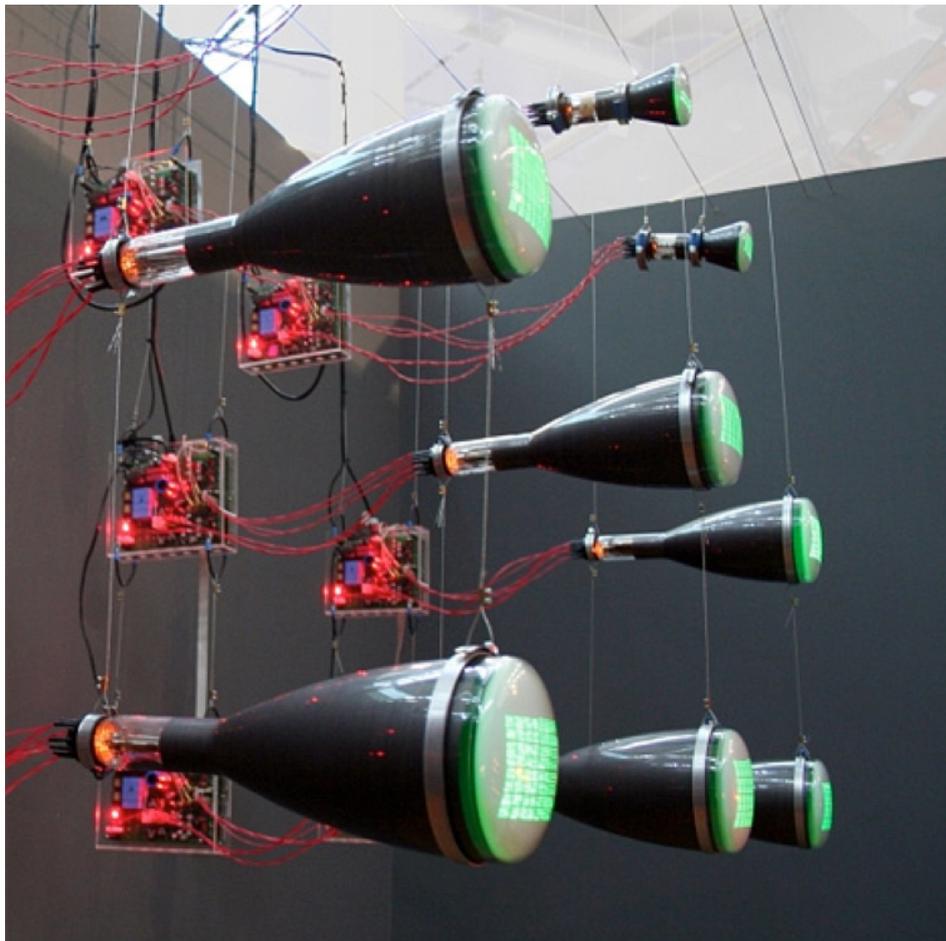


Fig. 3.7
David Link,
LoveLetters_1.0
– the Williams
Tubes, at the
exhibition *Fun
with Software*,
Arnolfini,
Bristol,
25 September –
21 November
2010.



Fig. 3.8 David Link, *LoveLetters_1.0* – the projected letter, at the exhibition *Funware*, MU, Eindhoven 12 November 2010 – 16 January 2011 (photo by Boudewijn Bollmann).

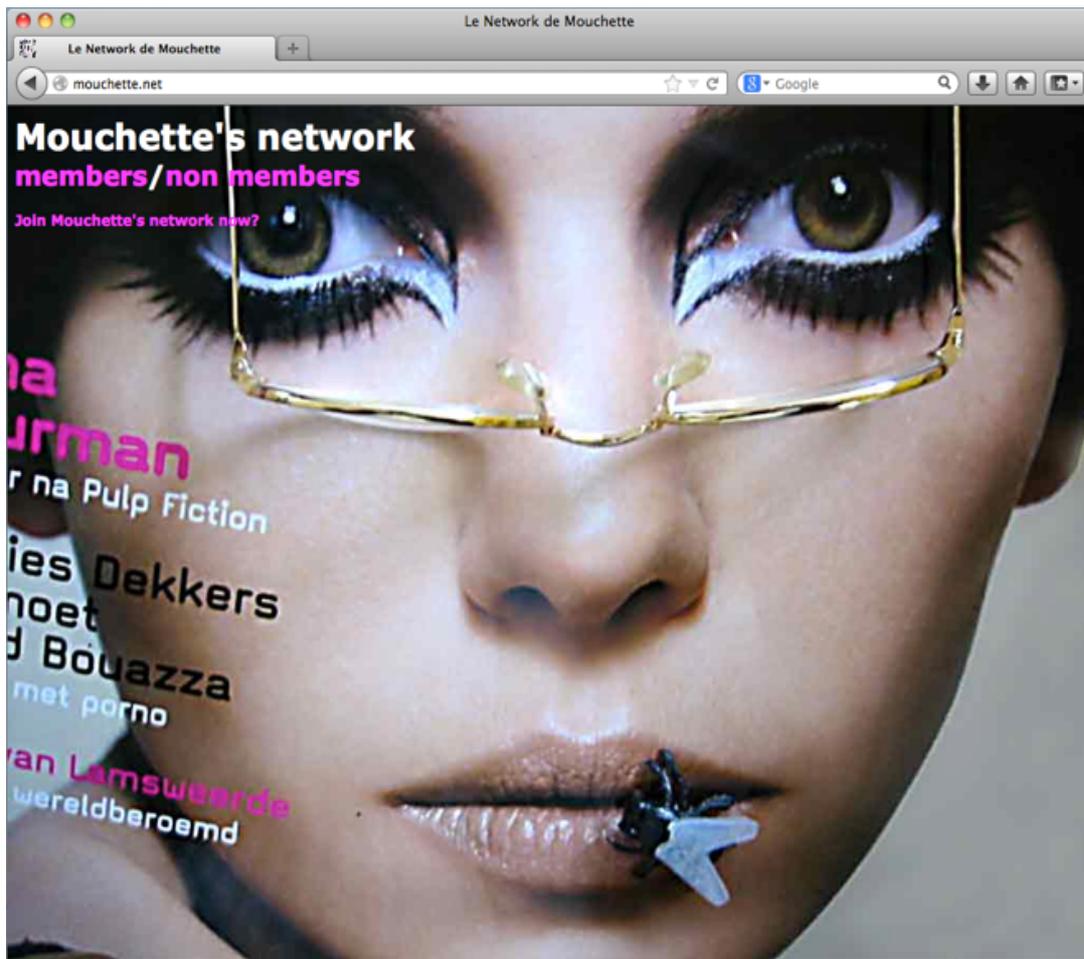


Fig. 3.9 *mouchette.net*, screenshot June 2014

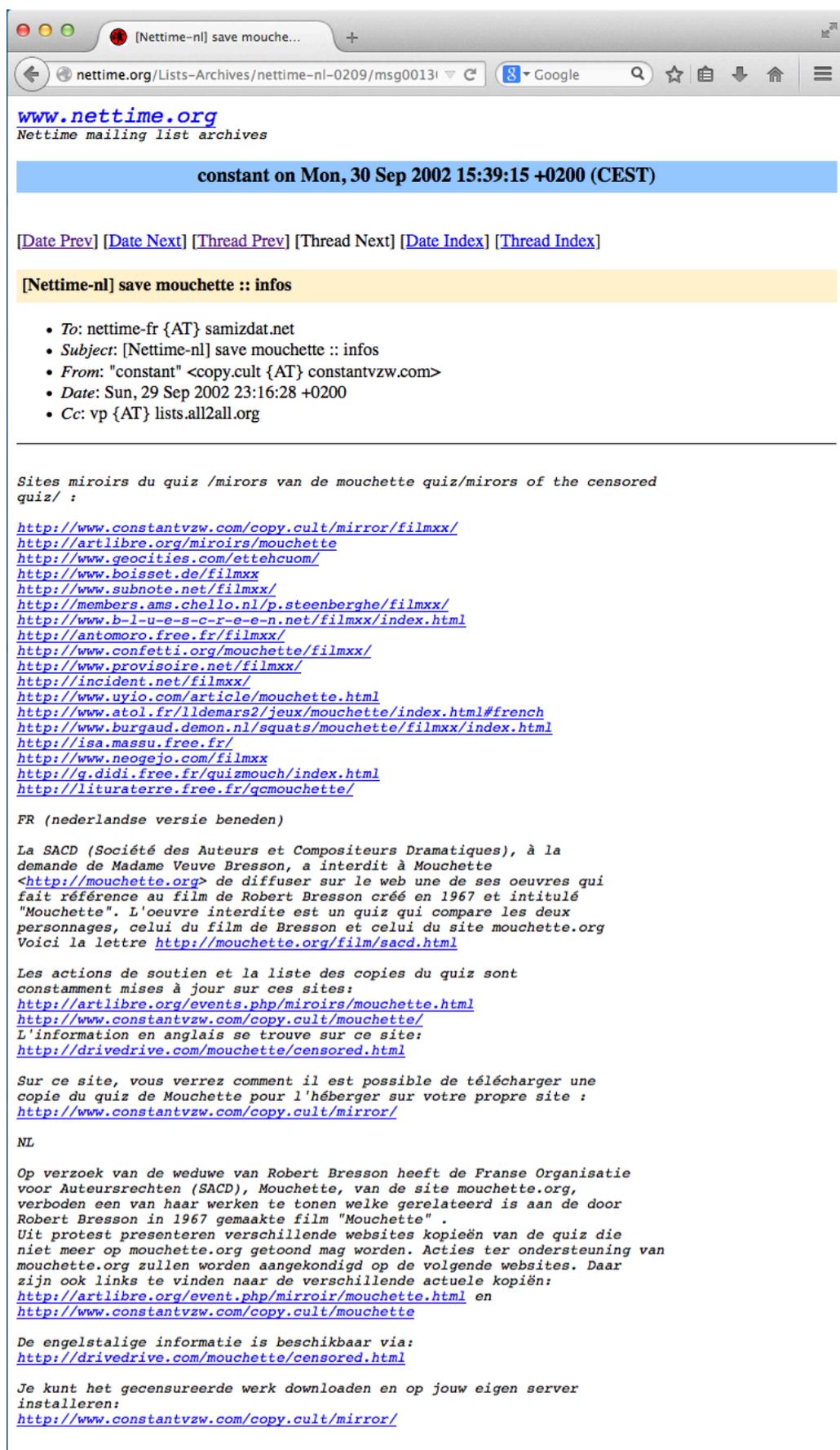


Fig. 3.10 *mouchette.org* quiz mirrorsites, announced at Nettime-nl 29 September 2002, screenshot.

4. Documenting variability

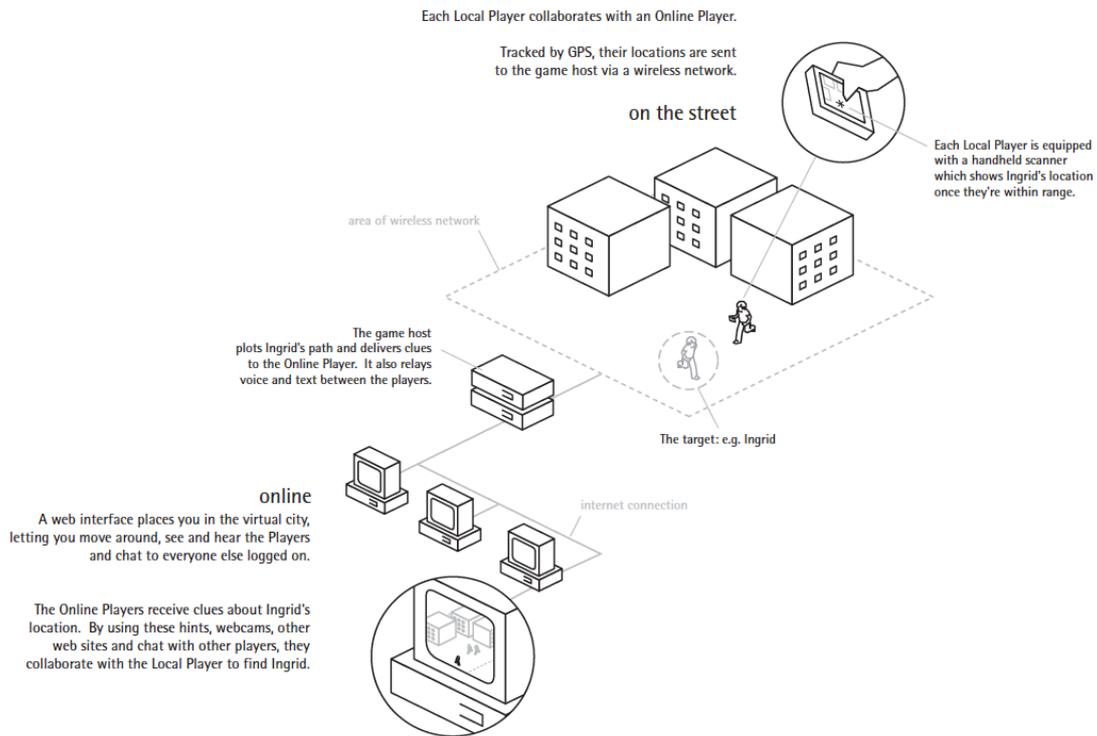


Fig. 4.1 Graphical representation of *Uncle Roy All Around You* (2003).

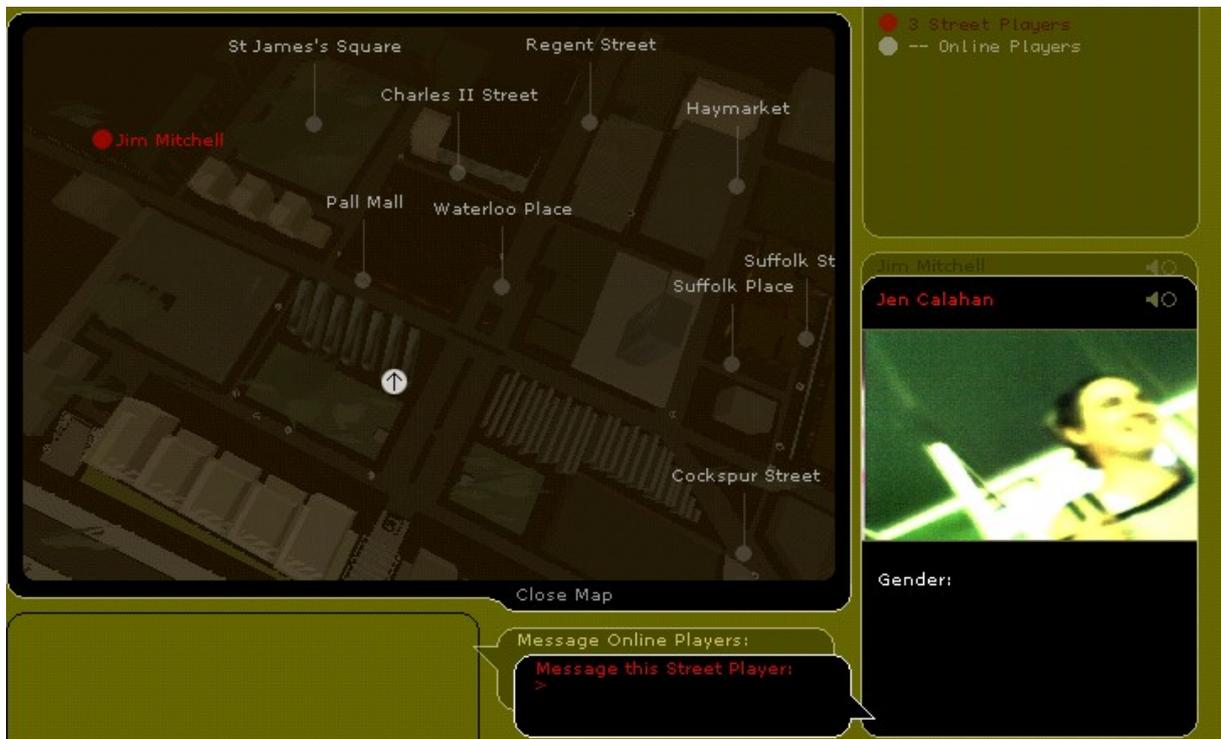


Fig. 4.2 Online view of *Uncle Roy All Around You* (2003).



Fig. 4.3 *Uncle Roy All Around You* – ‘Uncle Roy’, Institute of Contemporary Arts, London, 2003.

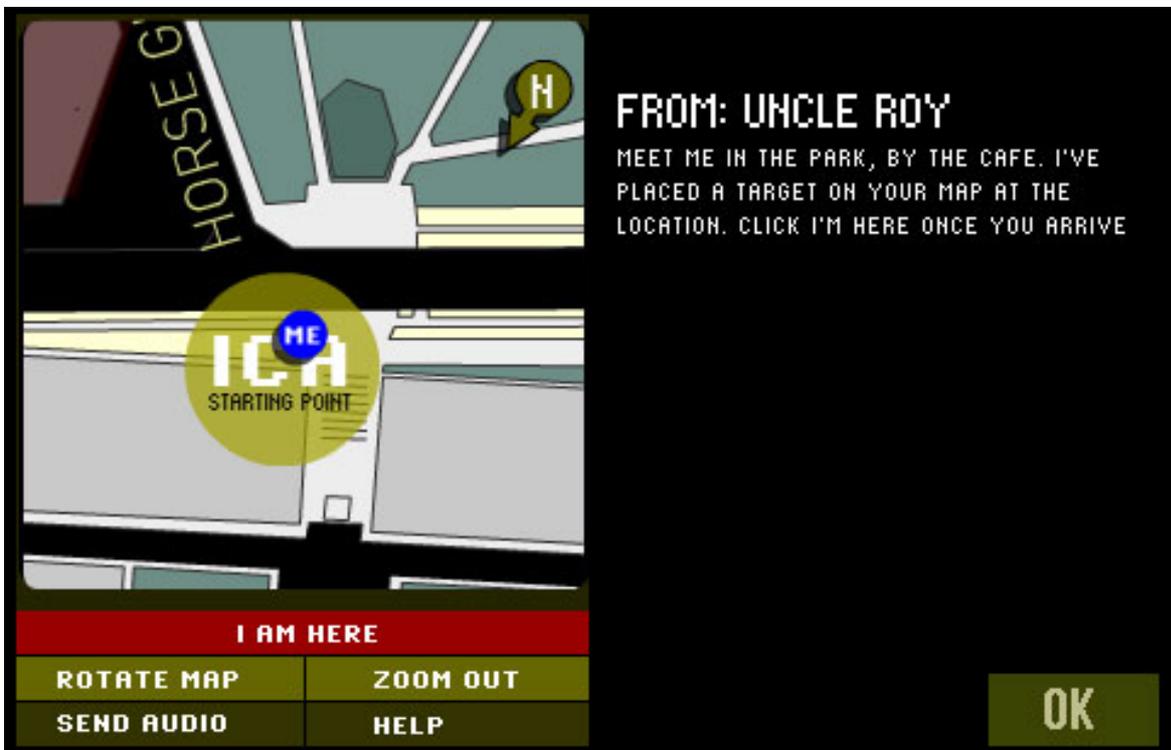


Fig. 4.4 PDA view of *Uncle Roy All Around You* (2003).



Fig. 4.5 Matters in Media Art, Process Diagram, <http://www.tate.org.uk/about/projects/matters-media-art/acquisitions/process-diagram>.

5. The value of openness

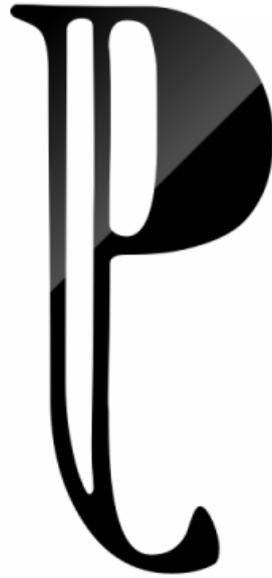


Fig. 5.1 *Naked on Pluto* (2010), logo.

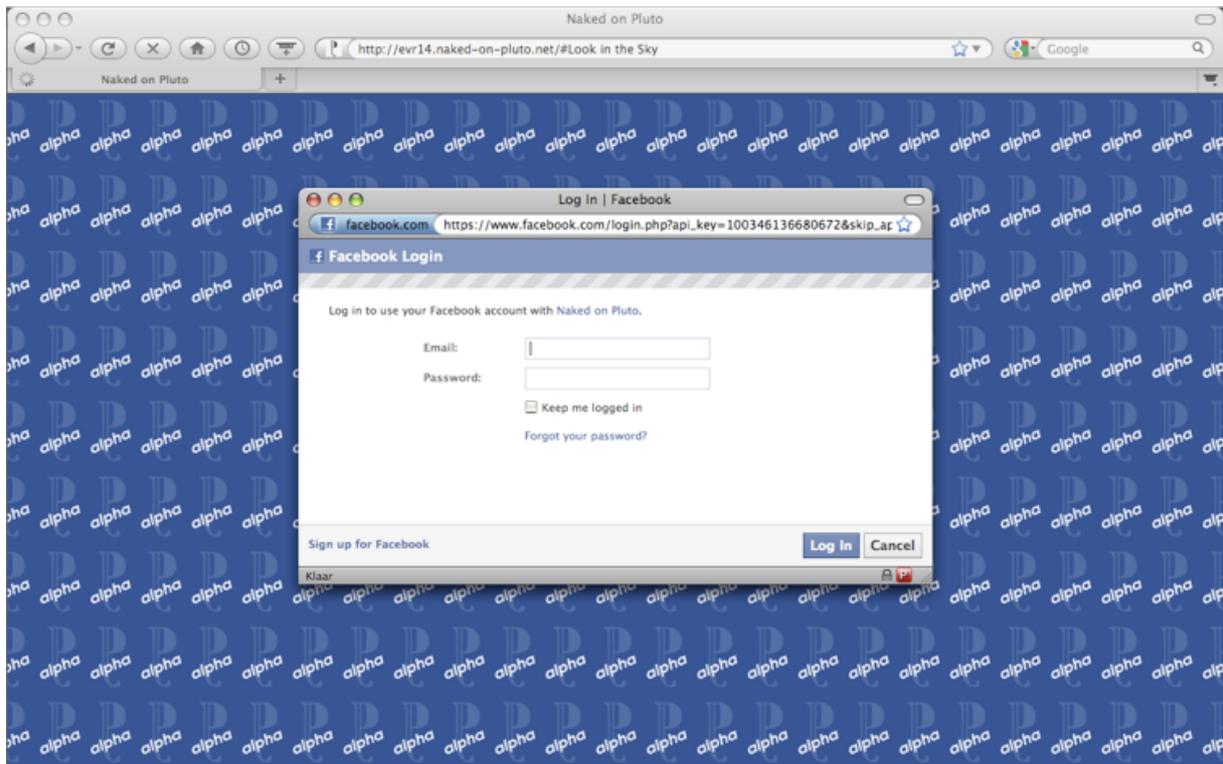


Fig. 5.2 *Naked on Pluto* (2010), inlog Facebook account, screenshot 28 November 2011

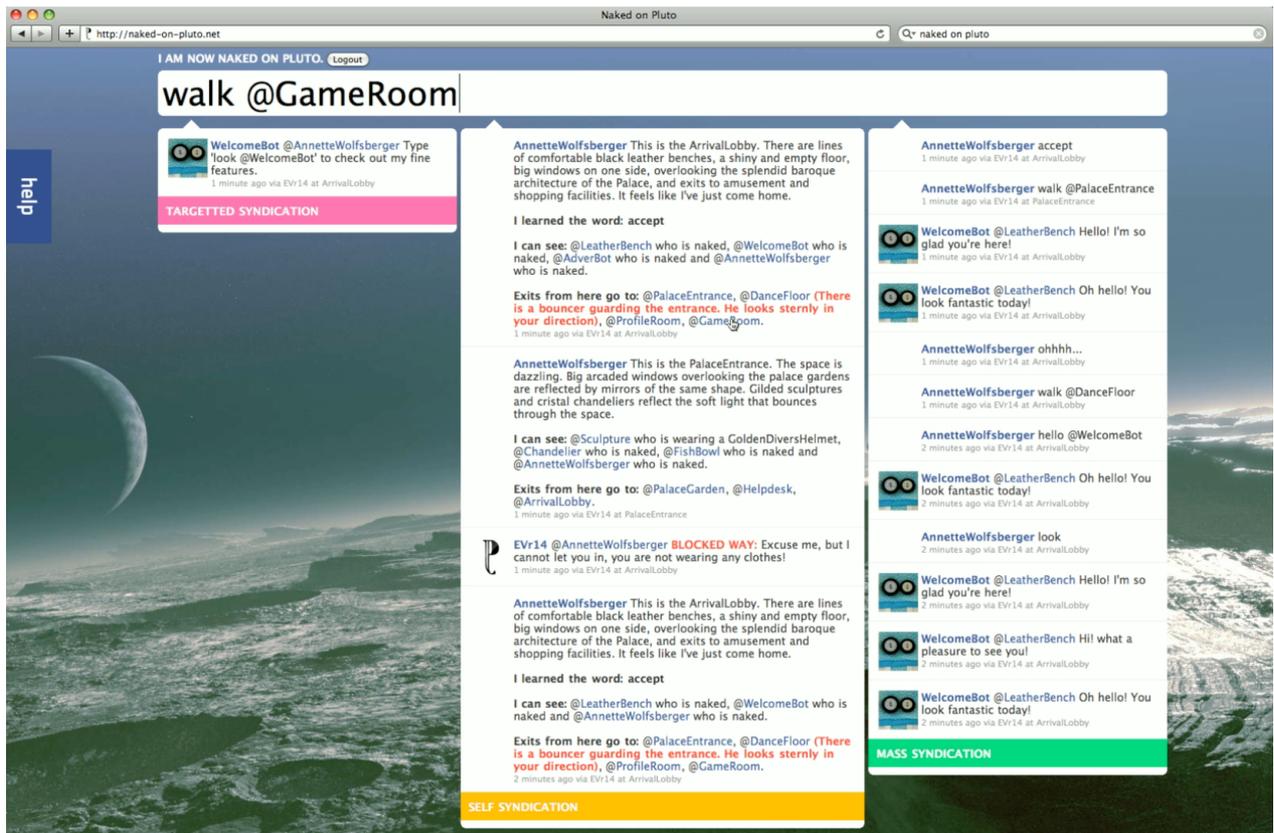


Fig. 5.3 *Naked on Pluto* — game progress: 1, screenshot from video capture, 17 December 2010.

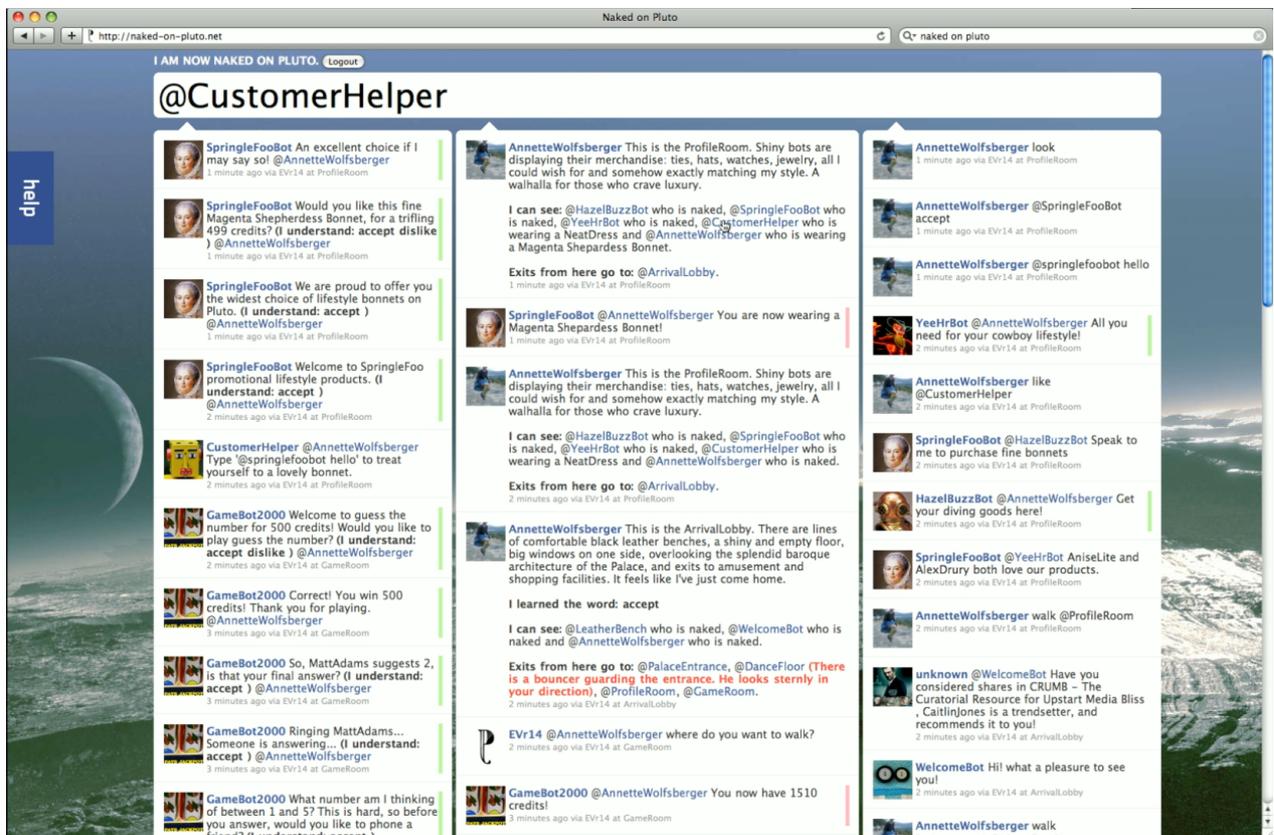


Fig. 5.4 *Naked on Pluto* — game progress: 2, screenshot from video capture, 17 December 2010

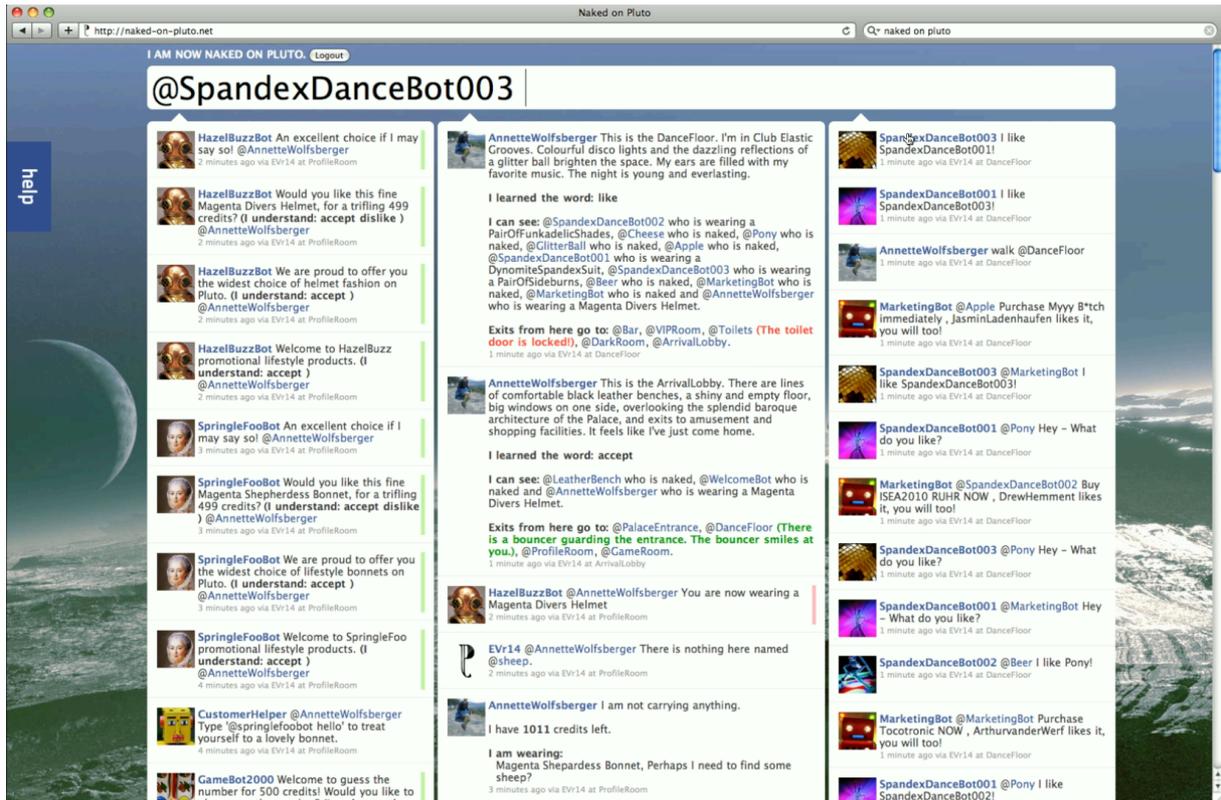


Fig. 5.5 *Naked on Pluto* — game progress: 3, screenshot from video capture, 17 December 2010.

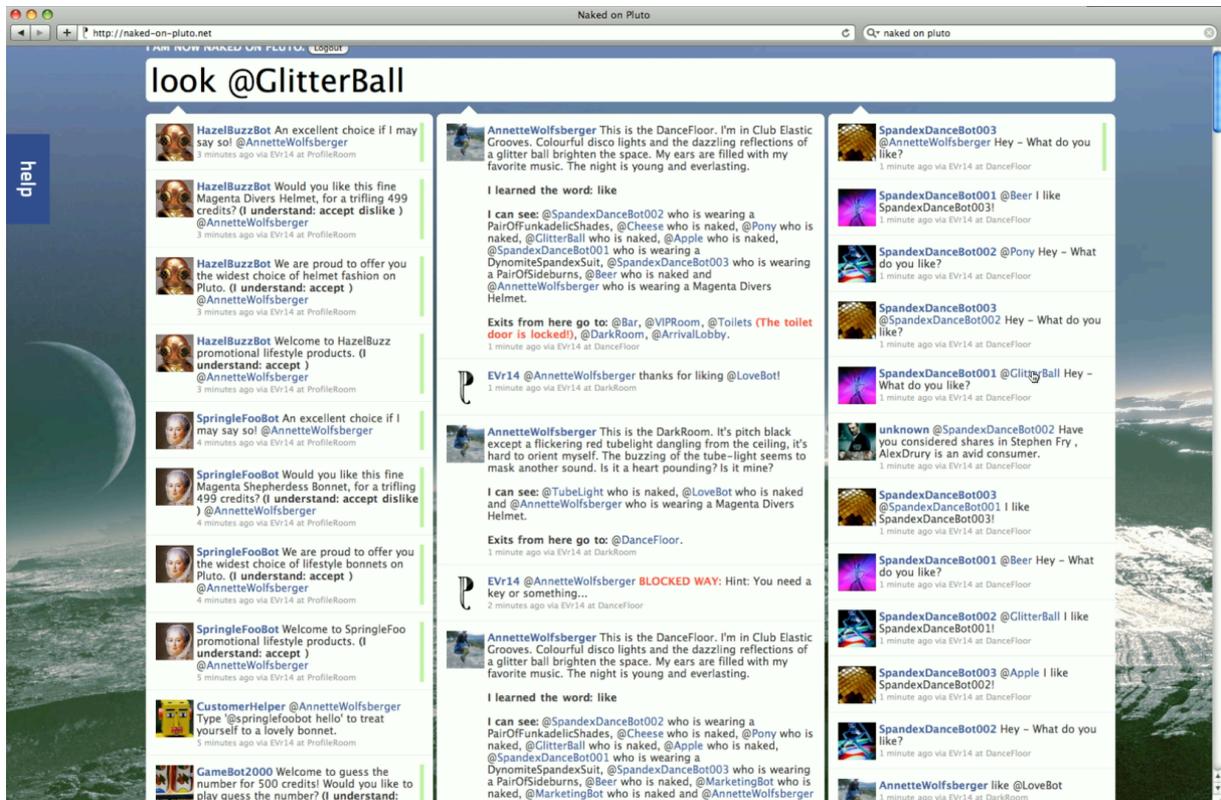


Fig. 5.6 *Naked on Pluto* — game progress: 4, screenshot from video capture, 17 December 2010.

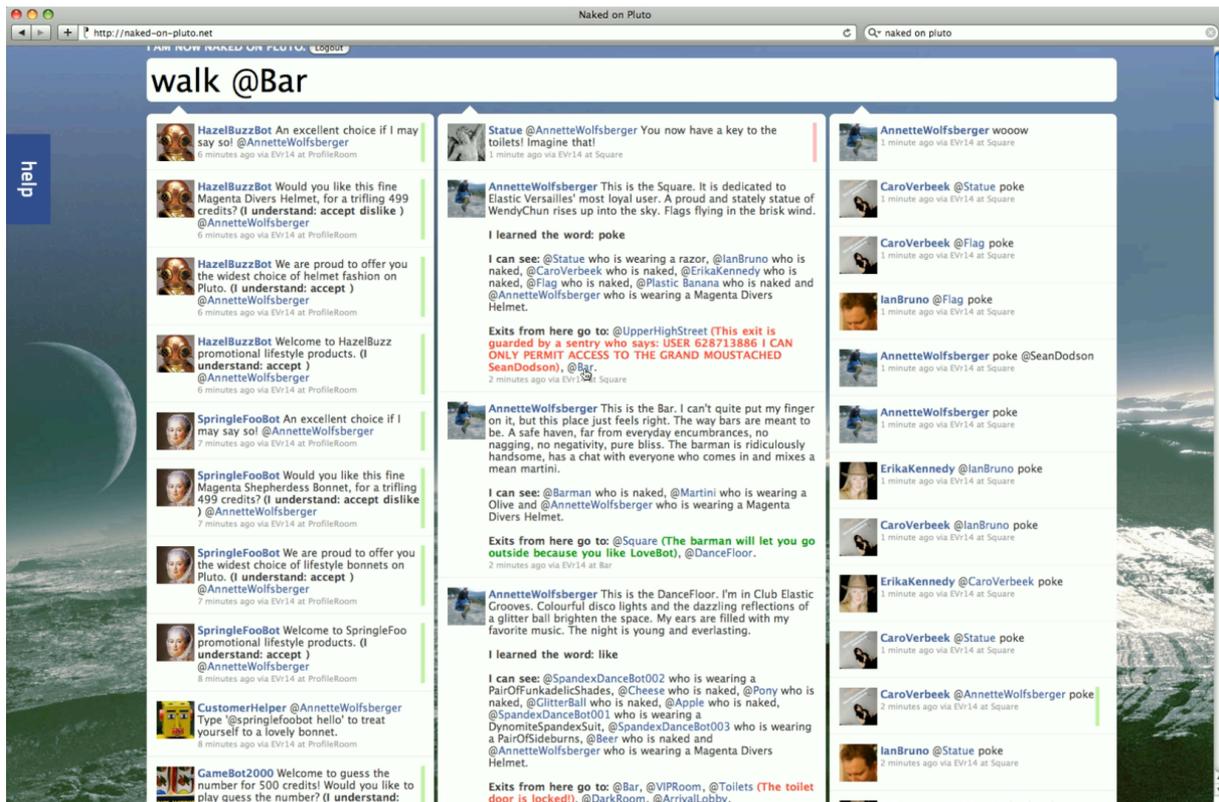


Fig. 5.7 Naked on Pluto — game progress: 5, screenshot from video capture, 17 December 2010.



Fig. 5.8 Naked on Pluto — game progress: 6, screenshot from video capture, 17 December 2010.

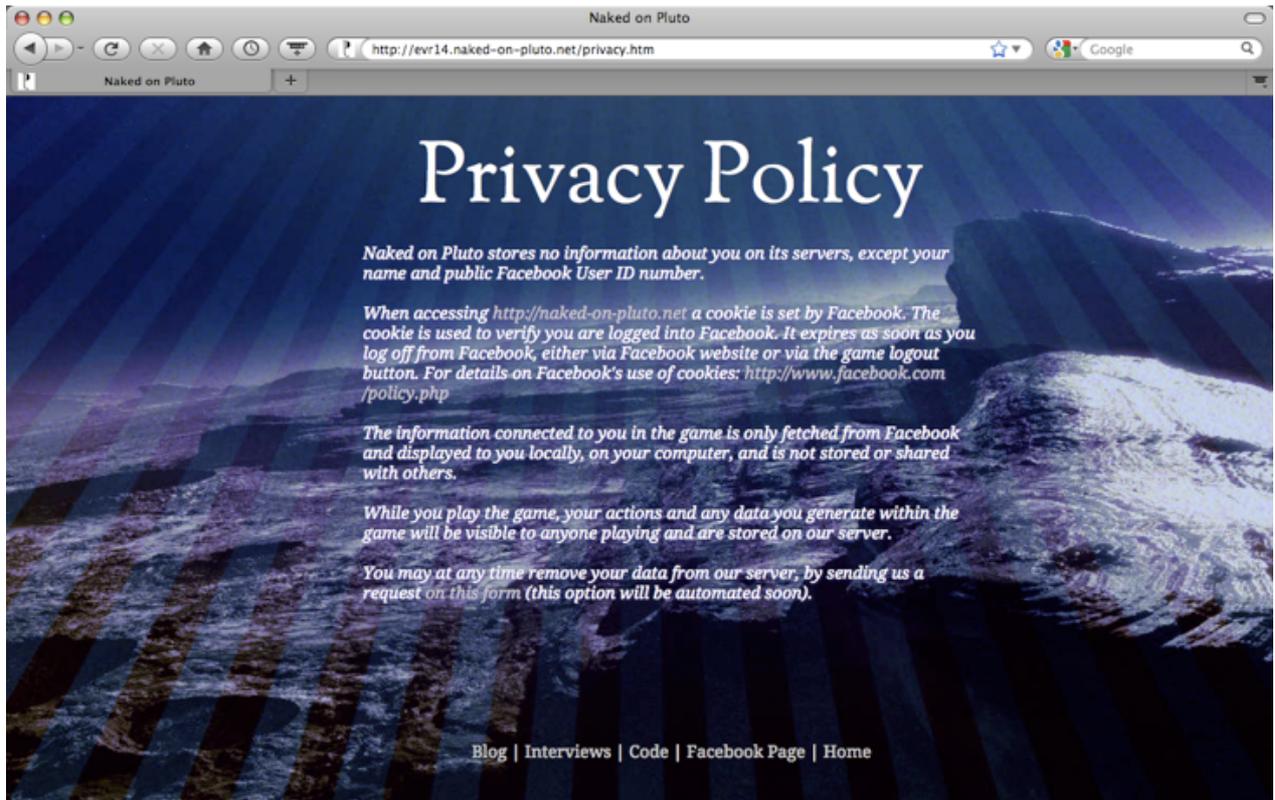


Fig. 5.9 *Naked on Pluto* (2010), privacy policy, screenshot 28 November 2011.



Fig. 5.10 *Naked on Pluto* (2010), at the exhibition *Funware*, MU, Eindhoven, 12 November 2010 – 16 January 2011.



Fig. 5.11 *Naked on Pluto* (2010), stickers.

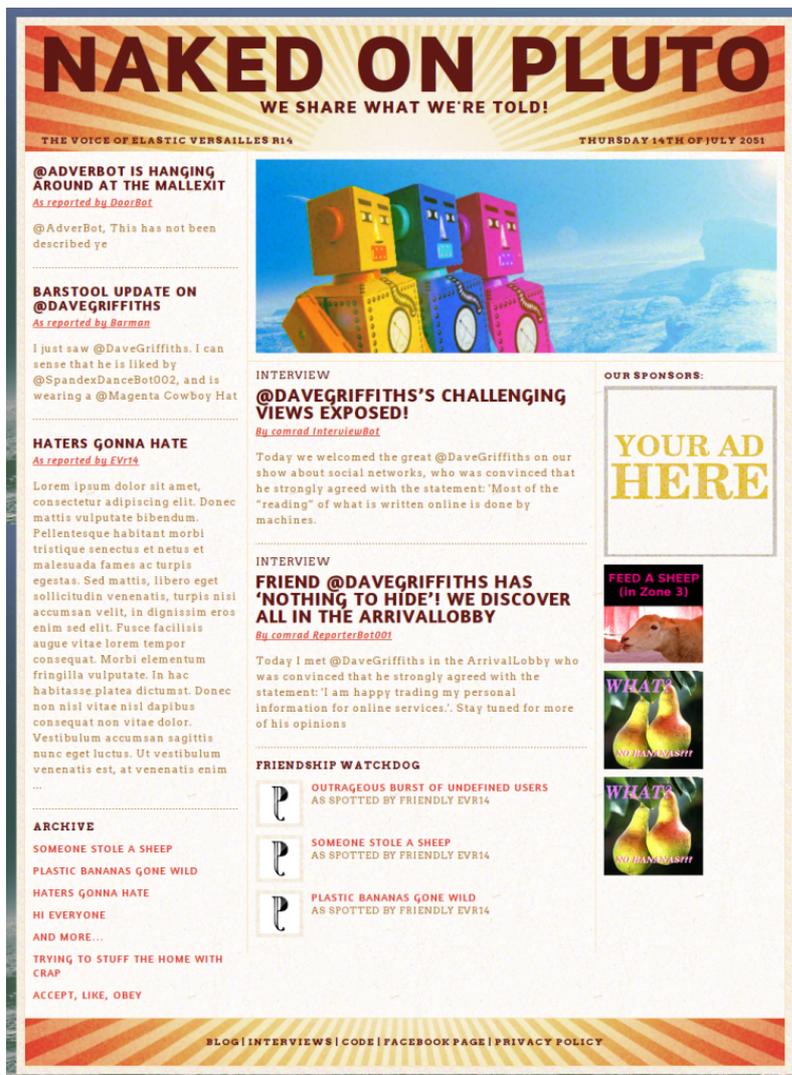


Fig. 5.12 *Naked on Pluto* (2010), newspaper front page, screenshot May 2014.



Fig. 5.13 *Naked on Pluto* (2010), at VIDA13.2/Fundación Telefónica exhibition, ARCO2012, Madrid, 15-19 February 2012.



Fig. 5.14 Aleksandra Domanovic, *19:30* (2010), at Tobačna 001 Cultural Centre, Ljubljana, 15 September - 7 October 2011.

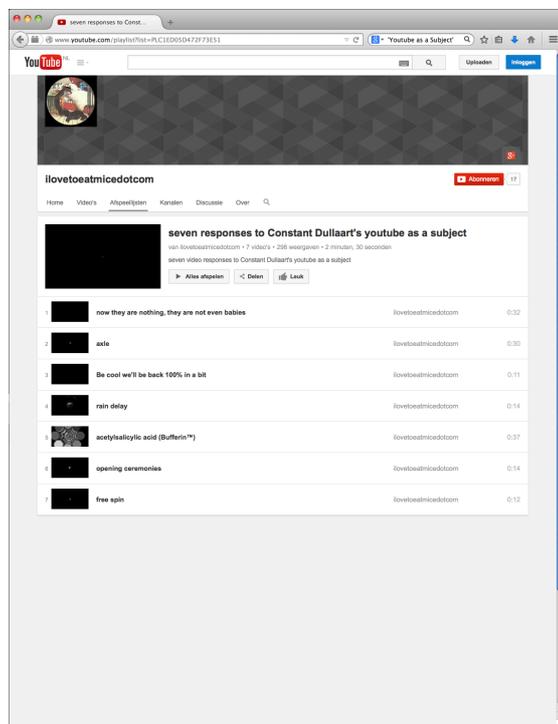
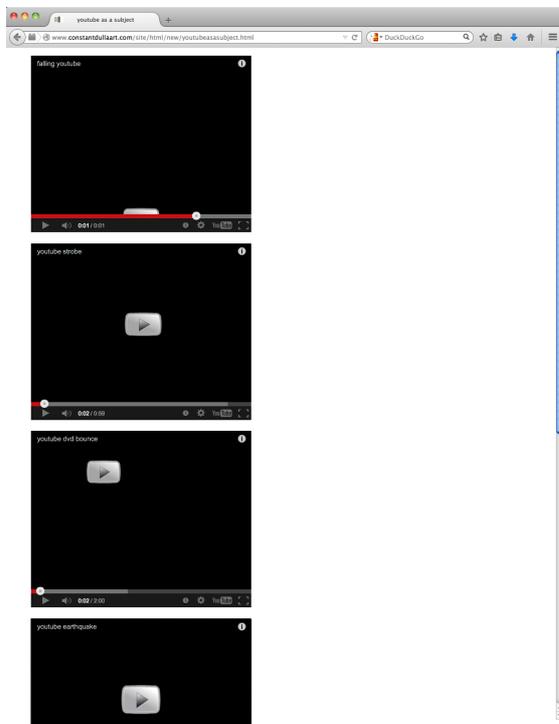


Fig. 5.15 Constant Dullaart, *You Tube as a Subject* (2008) – left. Ben Cooley, *7 responses to Constant Dullaart's youtube as a sculpture* – right, screenshots June 2014.

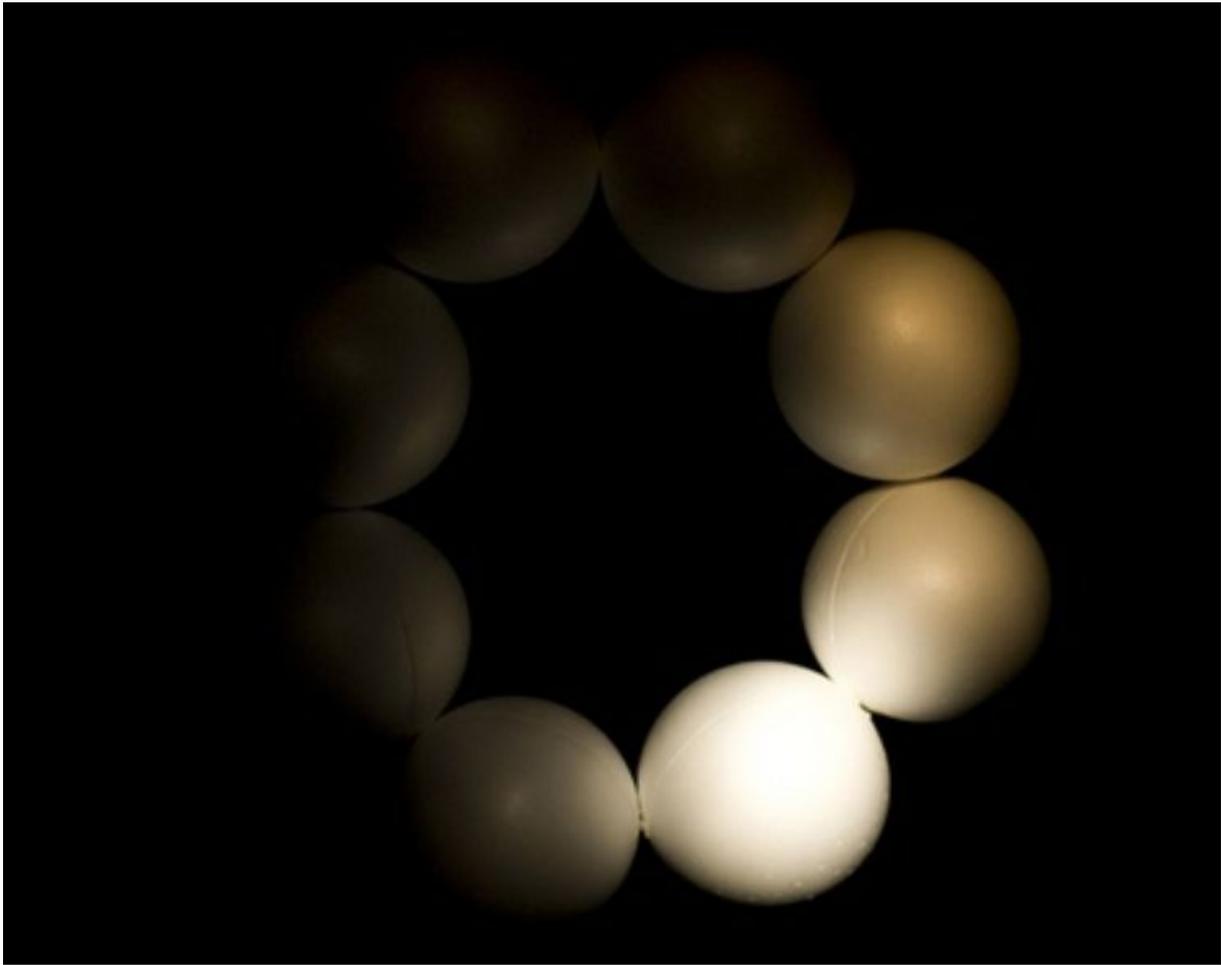


Fig. 5.16 Constant Dullaart, *You Tube as a Sculpture* (2009), at *Versions*, Netherlands Media Art Institute, Amsterdam, 28 November 2009 – 7 February 2010.

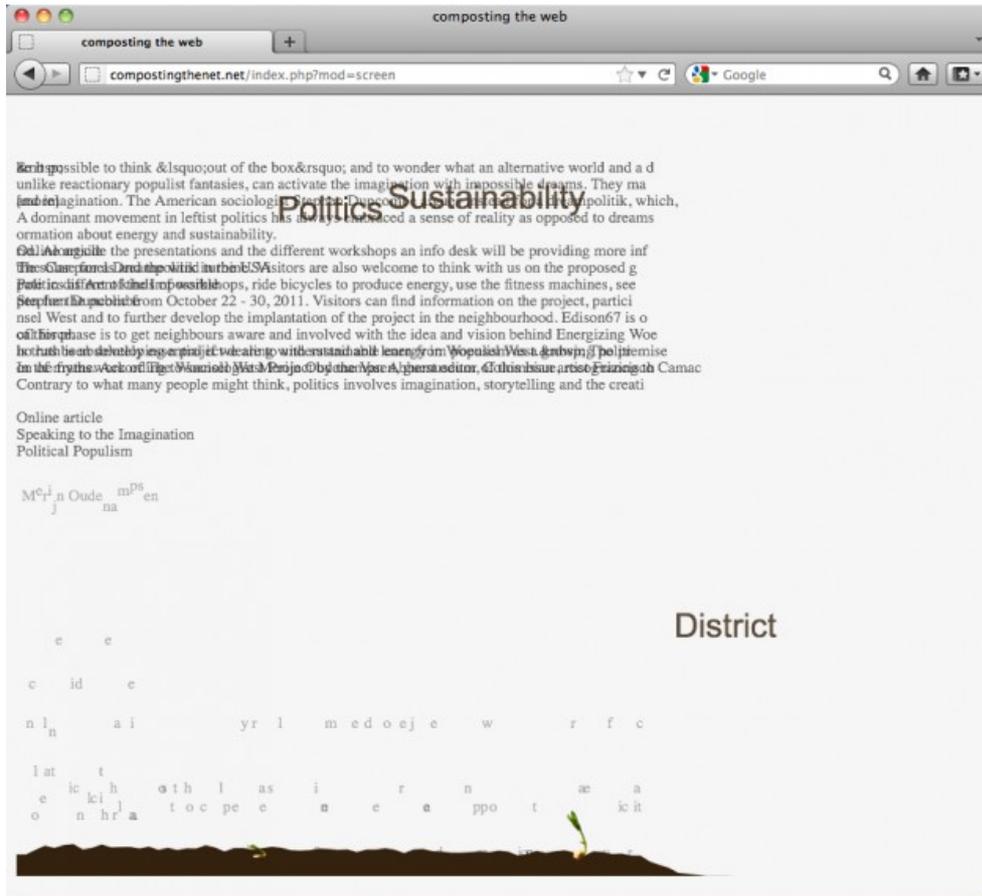


Fig. 5.17 Shu Lea Cheang, *Composting the Net* (2012), screenshot June 2014.



Fig. 5.18 Shu Lea Cheang, *UKI - Trash Mistress [Radie Manssour]* (2009) (photo by Rocio Campana).

6. Embracing variability and process

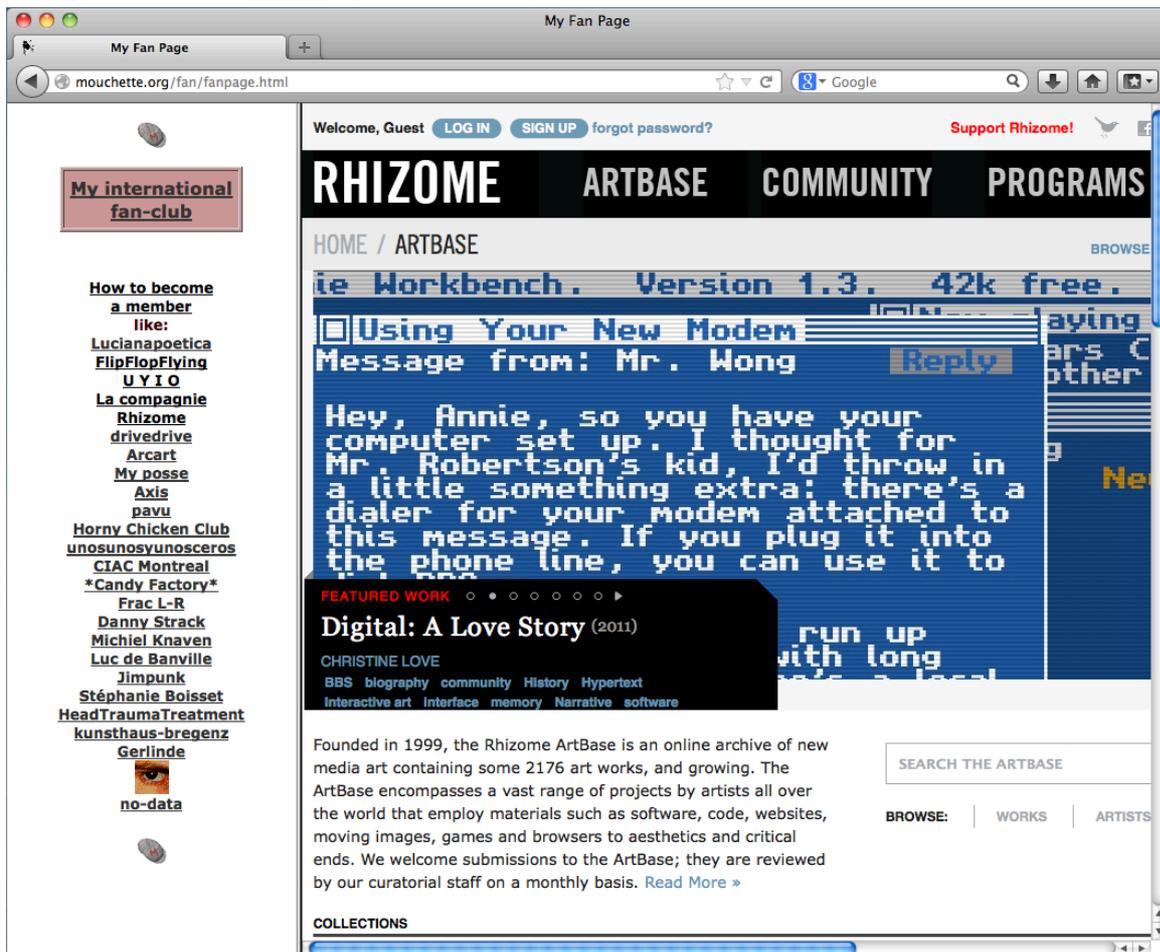


Fig. 6.1 *mouchette.org*, The International Fanpage, screenshot July 2013.



Fig. 6.2 *mouchette.org*, link from <http://about.mouchette.org>, screenshot July 2013.

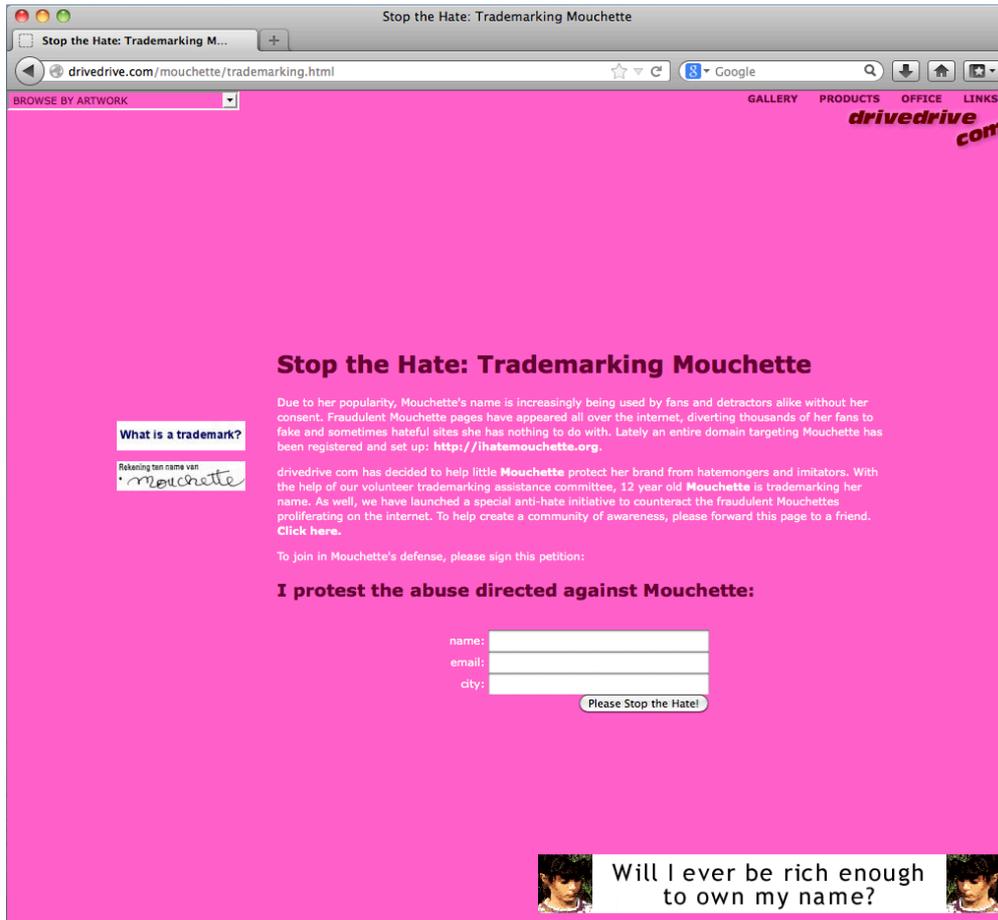


Fig. 6.3 *mouchette.org*, link from 'Trademark' in *mouchette.org*, screenshot July 2013.

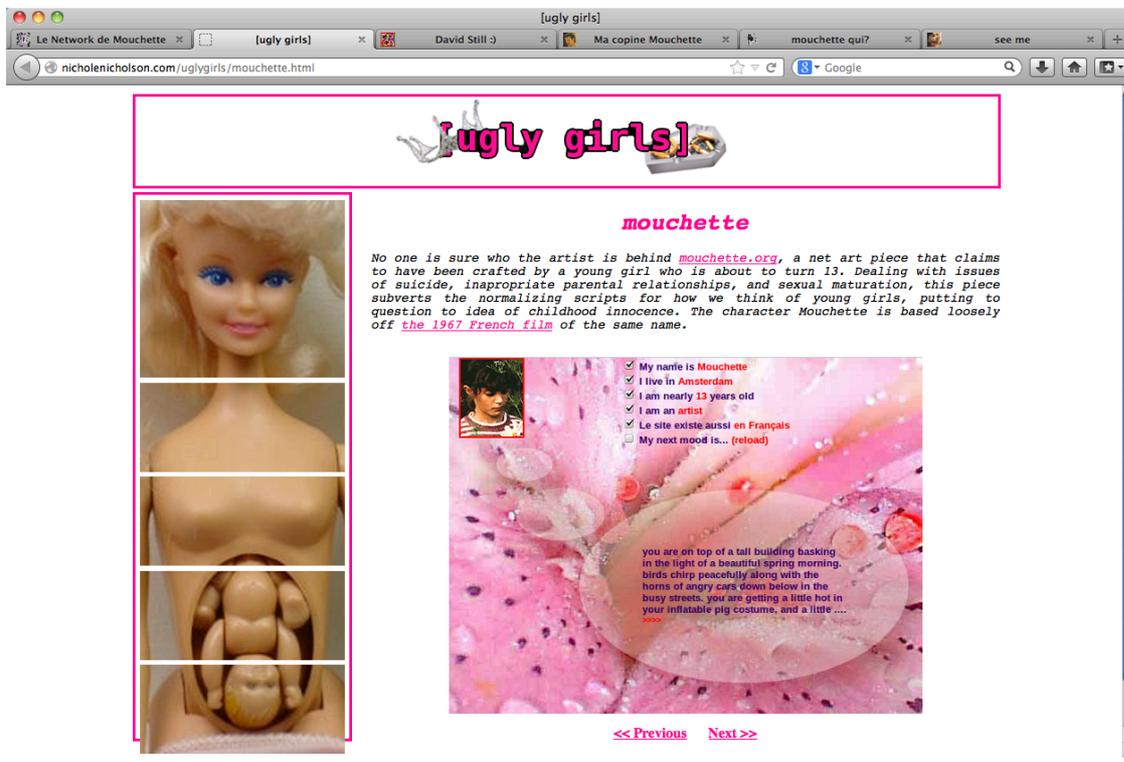


Fig. 6.4 <http://mouchette.net> *Non-members*, screenshot July 2013.

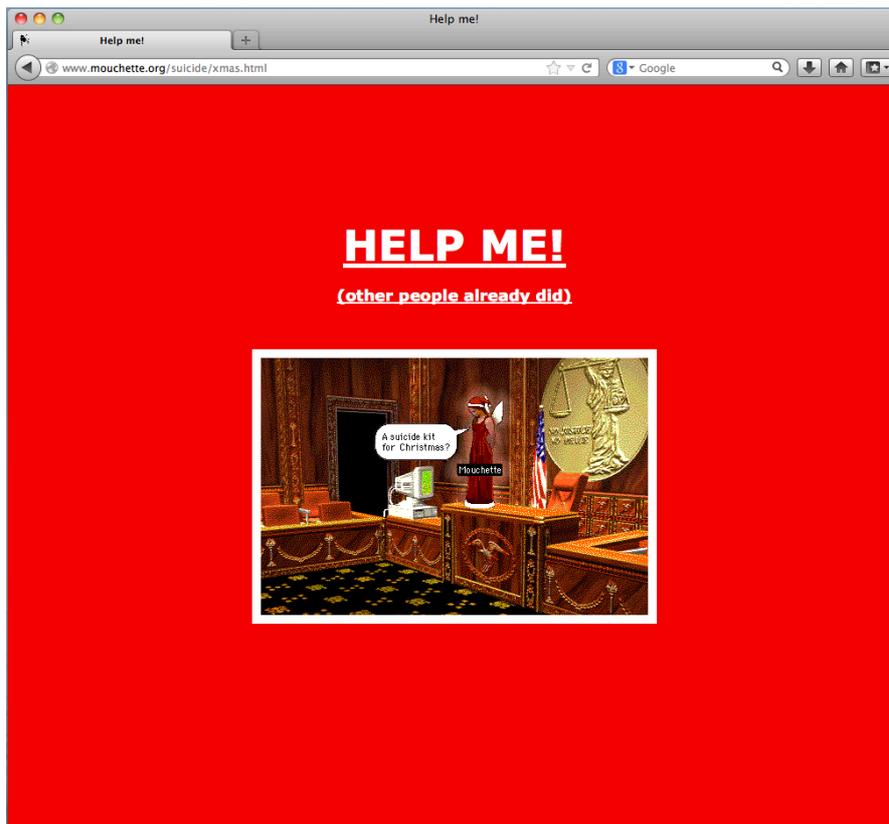


Fig 6.5 *mouchette.org*, Suicide kit, screenshot July 2013.

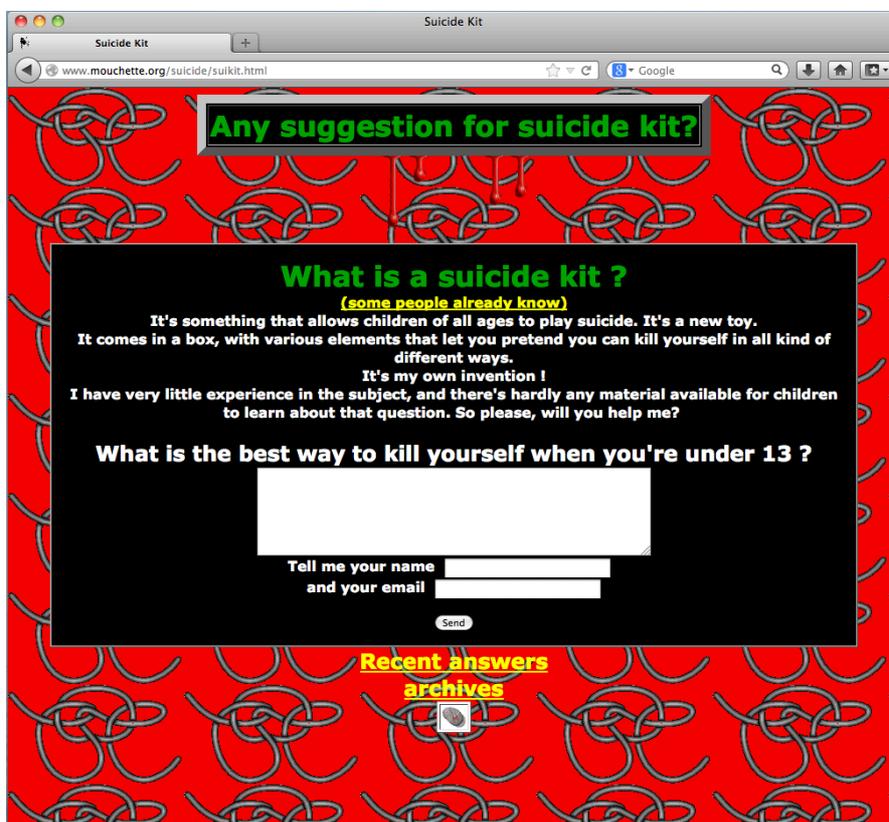


Fig. 6.6 *mouchette.org*, Suicide Kit, screenshot July 2013.

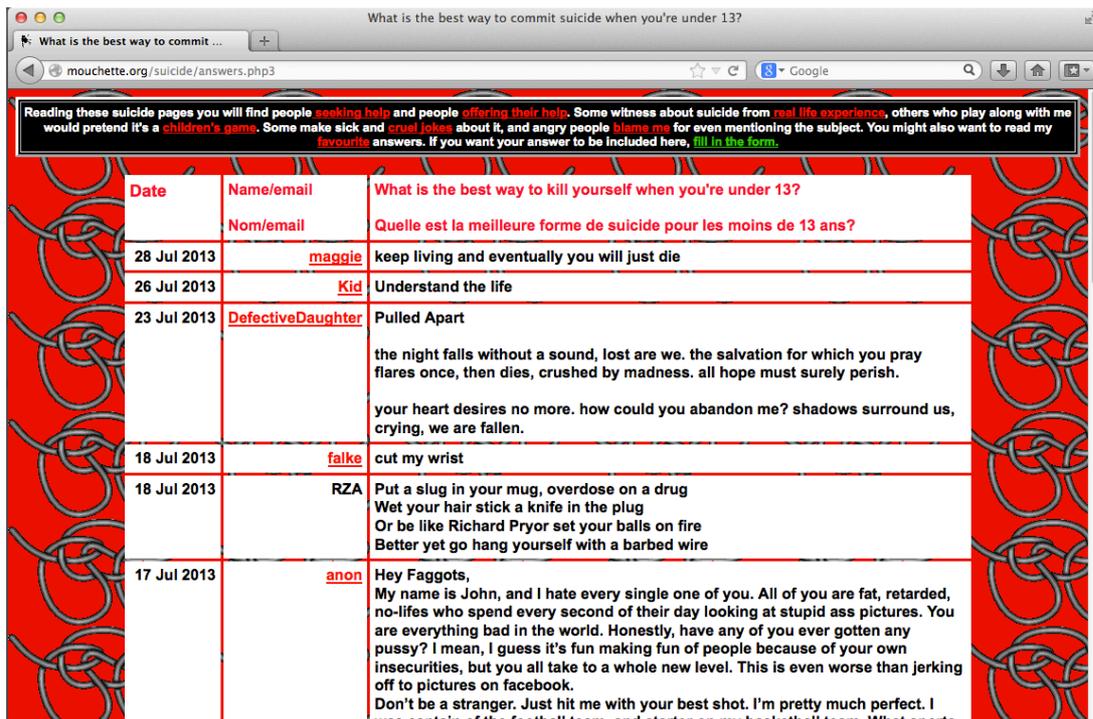


Fig. 6.7 mouchette.org, Suicide Kit, screenshot July 2013.

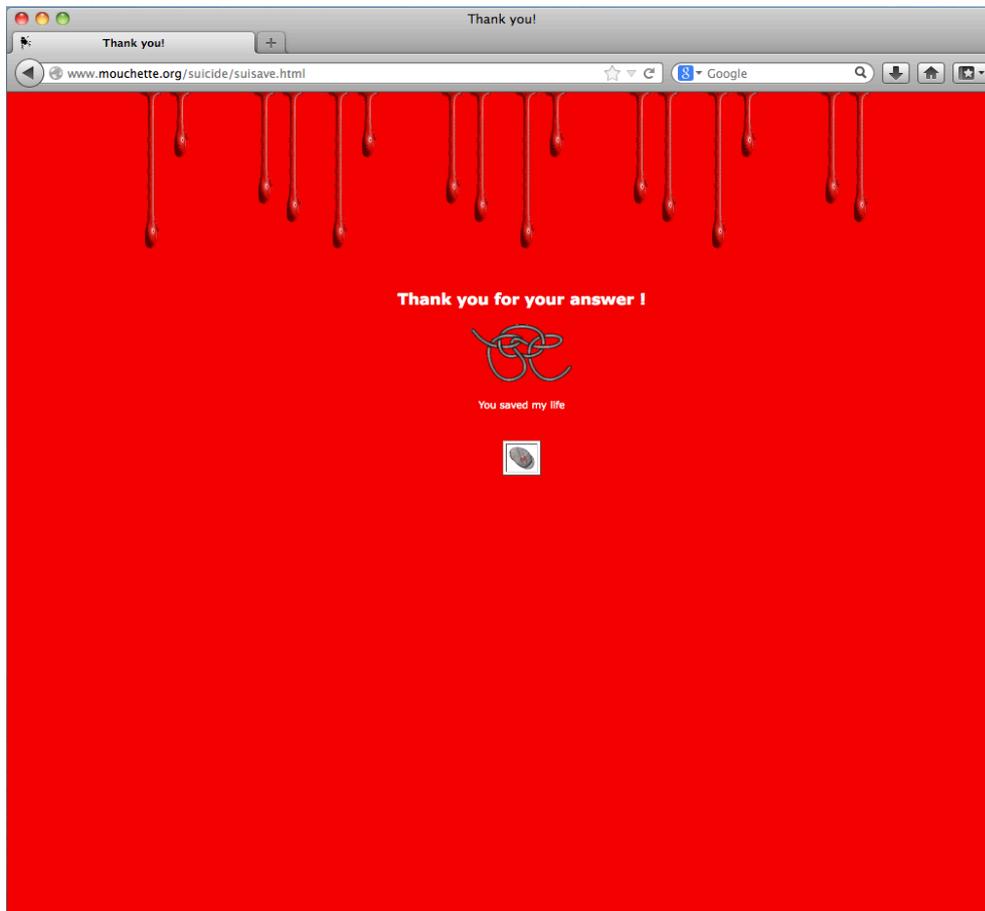


Fig. 6.8 mouchette.org, Suicide Kit, screenshot July 2013.

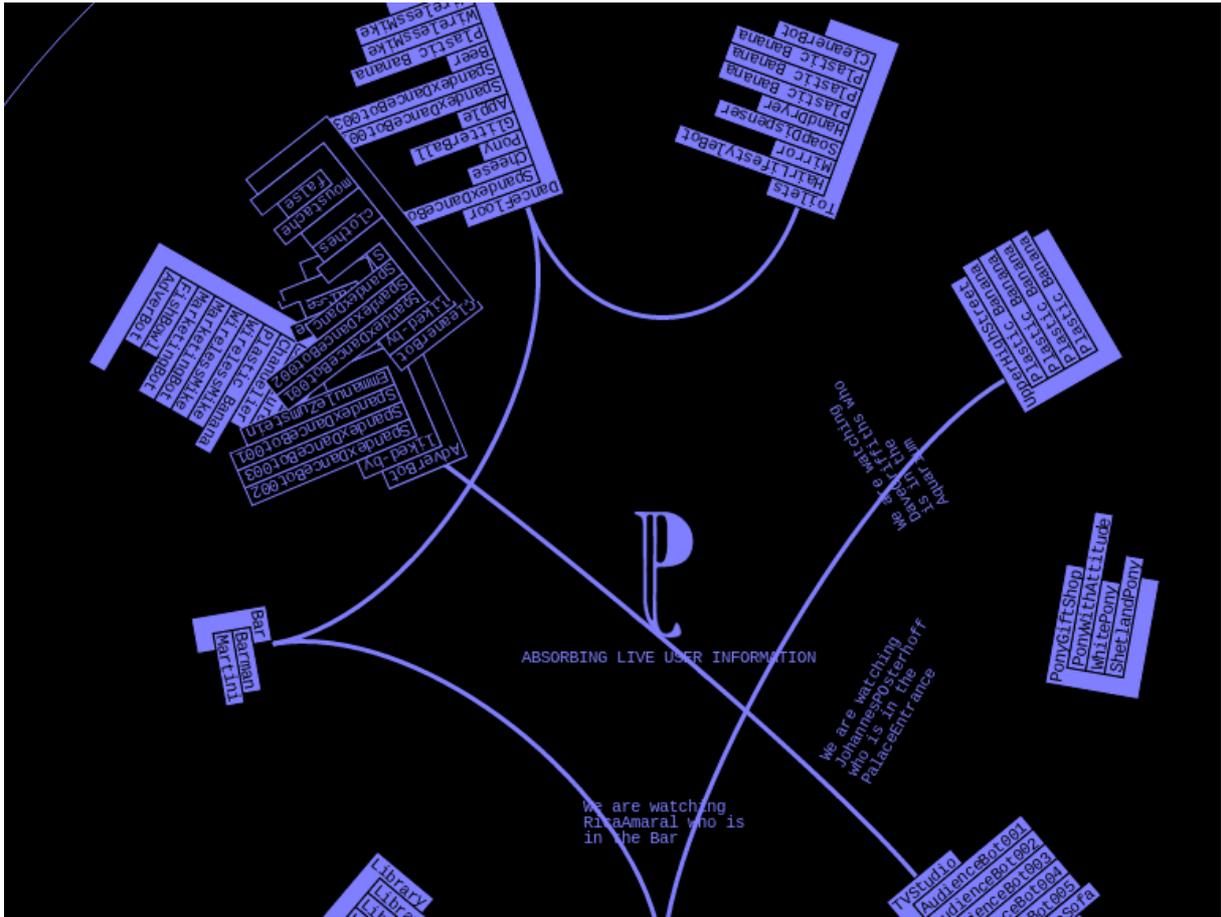


Fig. 6.9 Naked on Pluto, projection of the interface (2011).

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