

Volume 1

On the Persistence of a Modest Medium

**The Role of Editorial Illustration in Print and Online
Media**

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Abstract

In this thesis I explore the role and significance of editorial illustration, developed in printed publications and evolving within online publishing structures. Editorial illustration has a long tradition of illustrating stories in news publications, but I argue that in current online news websites its particular role has all but failed.

Online publishing has become the driving force within editorial publishing and this raises the question whether, and how, editorial illustration can continue to be a successful constituent in an online publishing environment?

I argue that the continuation of editorial illustration lies within *digitally native* narrative forms, from online *interactive documentaries*, *game-based storytelling*, *data-visualisation* to *memes*: viral images spread through social media. Within these forms the significance and agency of illustration is not only clearly present but evolving, except here illustration is interwoven with the story.

I argue that these forms of illustration, as well as printed illustration, are based on the same conceptual model and articulate editorial illustration's inherent attributes. I propose a *constellation of four attributes* (manifestation, translation, reflection, and engagement) that together give rise to the key quality that illustration offers to the reader, *deliberation*.

Illustration should not be understood as a separate artifact, positioned next to a text, but as a multimodal practice, always related to a story, enabled by the specific qualities of its contextualizing medium.

As practice-led research, the thesis explores this proposition in practice and theory within printed and online forms of editorial illustration and in relation to online media technologies and material properties. Central is the development of a potential method of online editorial illustration that I call *data driven illustration*, a formation employing the material and semiotic expressive potential of live data and code.

The research draws primarily from the ideas of media materiality (Hayles, Kittler, Manovich), but in doing so is supplemented with other relevant theories found in semiotics (Barthes, Hayles, Kress and van Leeuwen) and audience reception (Hall). This interdisciplinary approach is applied to the field of illustration through a historical study of wood-engraved news illustration in the *Illustrated London News*; through my own practice as an illustrator, in this case, work undertaken for the NRC newspaper; and explorations of various examples of online illustration.

This thesis offers a first step in constructing a framework for editorial illustration, to move beyond the print paradigm and provide a language through which to explore illustration as an emergent practice.

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Signature _____ Date _____

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illustration, interaction design and news media publishing that I have been honoured to interview and who have provided me with their valuable insight. As well as those who have offered their time to participate in the workshop Think Editorial Illustration.

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'Today's process of transition allows us to perceive what we are losing and what we are gaining- this perception will become impossible the moment we fully embrace and feel fully at home in the new technologies.'
(Žižek, 1997 p. 131)

1 Introduction

The Role of Editorial Illustration in Print and Online Media

1.1 A Personal Statement

This thesis has its origins in a lifetime's interest and personal investment in the future of my profession: editorial illustration. In the language of the industry the term 'editorial illustration' refers to the illustration of articles within newspapers and magazines.

In my experience, this field is often overlooked even though it is very much part of the reader's every day experience of news and magazine culture. Even when it is noticed, its powerful, expressive attributes are frequently underestimated. The American art-critic Harold Rosenberg (1978), in his text for a catalogue of the work of Saul Steinberg, one of the great (editorial) illustrators stated:

'In the lowly cartoon he [Steinberg,] found a medium susceptible of being transformed into an alphabet of meanings as flexible as that of words but with the additional dimension of the visual sign...the intellectual potential for drawing made for publication lay precisely in their being a modest medium, in which the spectator responds to the artists statement without requiring that it satisfy ideals of aesthetic prestige.' (Rosenberg, 1978 p.34)

The words *lowly* and *modest* are those of Rosenberg, but in my experience they still very much reflect a generally held misconception of what illustration, at its very best, can be. However briefly, an illustration is able to gift the reader a moment of deliberation, not through grand gestures but through an intervention created especially to invite, seduce and stimulate the reader, with humour, cleverness, aesthetics and stealth.

Ever since I began my illustration practice I have been as interested in how illustration functions as much as I enjoy the actual process of the assignment, the creation and the experience of seeing the finished results. As often as I was excited by the enhancement of its expressive powers through layout and written text, I was disappointed by the mistreatment and disregard for the relationship between design, text and illustration.

With the arrival of the Internet and the ability of websites (especially news related) to present images, I was puzzled as to why editorial illustration never seemed to be included in this new format. Rather than creating more opportunities for illustration, it seemed as though the opportunities were closing down. The present situation is not much different as original online illustrations are hardly ever commissioned, something I understood through the many conversations I had with colleagues and other practitioners in the industry. This has been revealed through field interviews with 20 professionals in the publishing industry, including illustrators, art directors and creative directors¹, through the

workshop Think Editorial Illustration, at the Royal College of Art (Hoogslag, 2012) in which twenty illustrators, illustration educators, art directors and students participated², and through the many conversations I have had with colleagues, students, art directors and clients over the years.

Over the years, in passing conversations there has never seemed a shortage of excuses for this neglect. At first the bandwidth and quality of screens were to blame; then illustration itself, it was just not *Cyber* enough; then it was the financial crisis within publishing, or the increasing speed and volume of news information, meaning that there wasn't enough time to commission. But I have long harboured the suspicion that these justifications camouflaged something else and it was this suspicion that led me to initiate the project titled *Oog* for a major Dutch national daily newspaper, *de Volkskrant*. *Oog* was an opportunity to test *in situ* the role that online editorial illustration could play in communicating and commenting on the news.

Oog was a dedicated webpage where artists were invited to become *Visual Correspondents*, where for three years a wide range of makers were invited to explore the possibilities of visual commentary within the online edition of a major newspaper and to test the expressive capabilities of the web. I would argue that the success of this project debunked many of the arguments listed above for illustration's unsuitability to an on-line context, except that the works in *Oog* were not illustrating in the traditional sense, as a picture next to a story. These were independent contributions, yet they very much responded and were related to current events and offered a particular analysis and point of view. So were the works in *Oog* visual commentary? Did they align with fine art or were they to be considered editorial illustration? For the makers themselves this was neither an interesting nor an important question. For myself, however, as a practising illustrator, answering these questions had greater sense of urgency, as the project suggested the beginning of a new set of possibilities; something that could be understood as an editorial illustration, but at the same time was

1. Paula van Akkeren (NRC), 2012; James Bates (Clearleft), 2013; James Brocklehurst (researcher), 2012; Matt Curtis (The Times), 2013; Andrew Diprose (WIRED), 2013; James Fenton (digital art director), 2013; Han Hoogerbrugge, (artist and illustrator) 2012; Andy Hume (Guardian), 2012; Harm Ikink (science journalist), 2012; Simon Ings, (ARC) 2013, Nicola Jennings (Guardian), 2012; Matt Kenyon (illustrator) 2012; Max Kisman (illustrator), 2012, Natalie Lees (The Times), 2013; Sarah Marshall (online journalist) 2012; Dominic Minns (Plugin Media), 2012; Dimitri Nieuwenhuizen (LUST), 2012; Mariana Santos (Guardian), 2013; Tobias Sturt (Guardian), 2014.

2. Think Editorial Illustration Workshop in November 2011, participants were: Paul Bowman, illustrator, educator; Peter Brawn, editorial designer; Yves Francois, MA student; Frazer Hudson, illustrator, educator; Gillian Blease, illustrator; Lee Ford, illustrator, educator; Andrew Foster, illustrator, educator; Jasmin Fung, MA student; Babette Wagenvoort, illustrator, educator; Andy Baker, illustrator, educator; Chris Draper, illustrator, educator; David Garcia, media theorist/ dean chelsea research, professor; Fuchsia Macharee, MA student. Sophie Westerlind, MA student; Judith Asher, illustrator, educator; Sophie Gibson, interaction/ interface designer; Joseph Pielichaty, MA student RCA; Fei Wang MA student / Chinese magazine; Danai Tsouloufa, MA student; Geoff Grandfield, illustrator, head BA illustration Kingston; Catherine Anyango, illustrator, educator; Dan Fern, illustrator, educator, professor; Jo Davies, illustrator, head BA illustration Plymouth; Teawoo Kim, MA student; Ronit Mirsky, MA student; Alexandra Dommert, MA student; Rachel Lillie, MA student.

also somehow different. It was these questions that fuelled an urgent need to ask: what if any illustration could participate in the online environment, what aspects of the field of editorial illustration³ would remain the same, would be different? If I could find some of the answers to these questions, then perhaps this would provide powerful indicators to the future of my profession.

1.2 Introduction

This PhD in practice explores the following question:

What is the role and significance of editorial illustration within editorial publication and how is this affected by online technologies and expression?

This research explores the function and functionality of editorial illustration in print and online media and the manifestation of its inherent attributes and key quality; to facilitate the creation of meaning for the reader.

Over the past five years online publishing has become the driving force within editorial publishing. (Pew Research Center's Project for Excellence in Journalism 2010, 2012; Ofcom, 2014; Newman, 2014) The technologies and networks of online media have instituted new structures of dissemination, material expression and narration. Even though most mainstream editorial websites still present strong traits of print culture, the new structures challenge the validity and even the existence of traditional actors and publishing formats within this domain, among them the editorial illustration. The prevailing practice in news media websites of the (re)use of editorial illustration, based on an understanding of the illustration as a separate picture, but in a manner dictated by informational design structures, has resulted in a situation where illustration simply fails to function as intended.

I argue that editorial illustration should not be understood as a separate referential object, but as an emergent multimodal practice responding to the material context in which it is presented. These characteristics have also always been present in the printed illustration, but it is only now with the arrival of online outputs that these characteristics become visible in forms such as interactive documentaries, game-based storytelling, forms of data-visualisation as well as memes; viral images spread through social media. Here the currency of editorial illustration is maintained through

3. I use the term discipline for: a recognised branch of learning or body of knowledge with its own intellectual history, discourse, and its own community of scholars, teaching and learning. (Repko, 2011). Illustration has its own independent presence within academic teaching as well as it own, be it very young, academic discours, for instance in Peer reviewed journals such as Varoom and the Journal for Illustration, I define illustration as a discipline. Following Repko's destinction, within illustration I consider editorial illustration an applied or professional field..

embracing the online and digitally native materiality. This offers editorial illustration an alternative set of expressive possibilities, not necessarily only visual and often seemingly indistinguishable from the story it illustrates. However I maintain that story and illustration are still distinguishable, but through different modes of expression. It is here that I present the continuation of editorial illustration within online media structures.

Central to this thesis is the proposal and development of a conceptual model based on a description of editorial illustration's inherent attributes. I propose a *constellation of four attributes* that together give rise to the key quality that illustration offers to the reader, *deliberation*.

This proposition is explored in practice and theory within printed and online forms of editorial illustration, in relation to online media technologies and their material properties, framed within the context of printed and online editorial news publishing. As practice led research, it also explores the development of potential methods of online editorial illustration. I call these recent formations *data driven illustration*, formations which employ the material and semiotic expressive potential of live data and code.

The epistemological foundations of this investigation into editorial illustration is drawn from a model of relational materiality, developed within Actor-Network Theory (Latour, 2005) allowing for the complex work that illustration performs to be illuminated from a theoretical grounding that is based in material media theory, (Kittler, 1999; Kress and van Leeuwen, 2001; Hayles, 2002, 2005; Manovich, 2002; Galloway, 2012; Fuller, 2008), (Barthian) semiotics (Barthes, 1977; Benjamin, 1992; Hayles, 2005; Kress and van Leeuwen, 2006) and audience reception, (Hall, 1993) as well as popular understanding of illustration (Crow, 2010; Heller and Chwast, 2008; Male, 2007; Brazell and Davies, 2013, 2011; Kraus, 2009; Zeegen, 2005), research into illustration (Miller, 1992; Grove, 2009) and research into 19th century newspaper illustration (Beegan, 2008; Reed, 1997; Sinnema, 1998)

Key works are *The Language of New Media* (Manovich, 2002), *Reading Images* (Kress and van Leeuwen, 2006) and *Multimodal Discourse* (Kress and van Leeuwen, 2001) *The Photographic Message* and *The Rhetoric of the Image*, (Barthes, 1977b, 1977c) *My Mother Was a Computer* (Hayles, 2005) and *Encoding, Decoding* (Hall, 1993).

These theoretical foundations are further supported and iterated by practice-led research (see methodology- Practice-Led Research), that explores the attributes of editorial illustration through the development, exploration and evaluation of a new method of online editorial illustration, *data driven illustration*.

This research is also supported by interviews with industry members involved in and around editorial illustration practice, in both print and

online news media publishing, (for full list see the interview list, p.159) as well as field research in the form an expert workshop (Hoogslag, 2012); also the exploration of online illustration in a cross departmental research project within the *Hogeschool voor de Kunsten Utrecht*, the Netherlands, involving departments of interaction design, art and management and visual communication as well as illustration (Volume 2 p.72).

Importantly this research is founded on knowledge gained from my own (editorial) illustration practice of nearly twenty-five years, my career as an illustration lecturer and my innovative curatorial practice within the online edition of the Dutch national newspaper, *de Volkskrant: Oog*⁴, in which I commissioned artists and designers to respond to news and current events within the context of online mediality.

In the academic landscape there exists little if any critical discourse on editorial illustration. As such, this investigation represents an important first step in addressing the significance and effectiveness of editorial illustration within editorial publishing as a whole. The research presents a conceptual model of illustration that opens up new ways of understanding the position, implementation and material structure of editorial illustration as well as its position within illustration more generally. The particular value of the research lies in the development of a sustainable future for the field within new and emerging media environments. The thesis findings will therefore be of particular interest for those working in the discipline of illustration, visual communication and fields of editorial publishing, professional practice, research and education.

4. *Oog* (2005-2009) was a visual commentary and opinion platform for the online edition of *De Volkskrant* (volkskrant.nl) a major Dutch daily national newspaper. During a period spanning more than four years, *Oog* every week presented a different digital artist working in sound, image and interaction to respond to news and current affairs. Artists became *Visual Correspondents* and explored their role creating an alternative insight into current events whilst experimenting with the visual possibilities within an online mass medium.

The *Oog* archive (currently inaccessible) represents a unique collection of works, an historical timeline through visualised events, showing the development of the then cutting edge digital imaging and showing digital art as news commentary exploring the alternative position of the visual with the newspaper environment.

This archive represents close to two hundred and fifty works of internationally renowned artists amongst others: *Angela Detanico and Rafael Lain Br, Annie Abrahams NL/ FR, Berend Strik NL, Broersen and Lukacs NL, Igor Stromajjer SL, Craig Robinson GB, David Reinfurt US, de Geuzen NL/ US, Dick Tuinder NL, Doron Solomon IS, Fucking Good Art NL, Geoff Lillemon (Ooculart) US, Han Hoogerbrugge NL, Graham Harwood GB, Jeroen Kooijmans NL, Jimpunk, Karen Lancel and Hermen Maat NL, Jochem Niemandsveld NL, Jody Zellen US, Kessels Kramer NL, Laure Ghorayeb LIB, Max Kisman NL, Martijn Engelbregts NL, Micheal Magruder GB, Motomishi Nakamuro J, Neasden Control Centre GB and Sylvie Zijlmans NL.*

1.3 Methods: Practice-Led Research

Speculations around how digital transformation reshapes illustration, particularly where the issue is hypothesising new methods of illustration, are best addressed from *within*. As an illustrator, educator and curator, I cannot ignore my long-standing experience nor what that brings in terms of extensive tacit knowledge. My professional skills and knowledge create an immediate context for examining new knowledge and new understanding through theoretical studies. Barbara Bolt (2007) argues that the value of the tacit knowledge of the maker is grounded in material practice, through dealing with the tools, materials of production and craftsmanship over time⁵ (Bolt 2007 p.30). She points out that this kind of understanding makes practitioners best placed to analyse both process and artefacts⁶ as outcomes, where they can make creative use of their *submersion* in the creative process. Equally this thinking needs to be translated into a written form, where the text and the process of writing itself, allows for the potential to be generalised and become part of existing research paradigms (Bolt 2007 p.33).

I agree with Bolt's understanding of the role of practice, which is embedded in Smith and Dean's proposed method of practice-led research, iterated with research-led practice⁷ (Smith and Dean, 2009). This method opens up the practice to theoretical and empirical exploration and vice versa in an oscillating iterative process. Findings from a practice-led research report commissioned by the *Arts and Humanities Research Council* (AHRC) point to the uncertainty of outcomes as inherent to a design process and argue that open-endedness should be accepted if the practice within a research setting is to be valid (AHRC, 2007). Within practice-led research the movement of research is from the *unknown to the known* (Sullivan and Dean, 2009 p.28) and emphasises knowledge creation rather than data collection. These and other ways of considering practice-led research will be explored through discussions around my own work and support the theoretical development throughout, particularly in the development of the case study from my own illustration practice in Chapter 3, as well as in Chapter 5 and in the examination of the research project in Chapter 6.

5. Based on Heidegger's examination of the particular form of knowledge that arises from our handling of materials and processes (Heidegger, *Being and Time*, 1966 in Bolt, 2007)

6. Central is the question on how issues, concerns and interests can be examined and brought out by process and the production of an artefact. It is important to note that in this setting the knowledge associated with the artefact is more significant than the artefact itself (Schrivener, 20020).

7. The Arts and Humanities Research Council (AHRC) defines practice led research as follows: 'Research in which the professional and/or creative practices of art, design or architecture play an instrumental part in an inquiry.' (AHRC, 2007)

1.4 Applied Editorial Illustration: the *Guardian* and *NRC* Newspapers

Throughout this thesis the focus is on editorial illustration within two particular established news-publishing titles between 2011 and 2013: the *Guardian* (United Kingdom), and *NRC* newspapers. The *Guardian* has a reputation, especially within the editorial illustration profession, for its attention to high quality visual design and considered image usage, which includes illustration. (King, 2006) The *Guardian* is also known for their innovative web design and bold implementation of digital technologies⁸ as well as for advanced development and exploration of data visualisation and data journalism in the *Data blog*⁹ (2009 – present). The *NRC* (The Netherlands) holds a similar position within Dutch national newspapers and is known for its quality design and well-considered image usage. My own professional experience is shaped by working for this news title for which I have created many illustrations over the past fifteen years.

In order to contextualise my own experience, but also to examine the significance of these two newspapers within the industry, a brief historical survey in Chapter 2 will focus on British illustrated news periodicals from 1841 to 1910. The *Illustrated London News* will provide a key example for some of the early approaches and attitudes toward the use of illustration.

1.5 Actor Network Theory as Framework

Actor-Network theory (ANT) is based on the work of *Bruno Latour*, *Michel Callon* and *John Law*. ANT is a theory of relational materiality (Law, 1999). It presents the material extension of semiotics, which allows for the material and semiotic - objects and signs - to be seen as parts of the same system. In this system each element has its own influence, ‘agency’, on other elements. It is the various levels and degrees of agency coming together that form a constitutive element, *the actor*. Through this actor, the agency is transformed into another actor, in a continuously evolving heterogeneous network. These agencies do not have to be of the same order, they can be technological, semiotic or metaphysical, come from human, abstract or material practices, and in so doing avoid a dualism between technology and society (Latour, 2005, 1998) Latour writes:

‘The new hybrid ‘actor-network’ leads us away from mathematical

8. The guardian.co.uk website won the Best Newspaper category three years running in 2005, 2006 and 2007 Webby Awards, beating (in 2005) *The New York Times*, *The Washington Post*, *The Wall Street Journal* and *Variety*. It has been the winner for six years in a row of the *British Press Awards* for Best Electronic Daily Newspaper. The site won an *Eppy* award from the US-based magazine *Editor & Publisher* in 2000 for the best-designed newspaper online service (The Guardian, 2014).

9. theguardian.com/news/datablog.

10. Translations are ‘local processes of patterning, social orchestration, ordering, and resistance’ that generate ‘ordering effects such as devices, agents, institutions, or organizations. So “translation” is a verb which implies transformation and the possibility of equivalence, the possibility that one thing (for example, an actor) may stand for another (for instance a network)’(Law 1992, p.386) in Boomen 2014 p.21).

properties into a world which has not yet been so neatly charted. To sketch these properties we should now move on from static and topological properties to dynamic and ontological ones. (Latour, 1998)

In short, rather than fixed objects with defined connections, both actor and agency are a continuous series of processes, influencing and influenced by each other.

(ANT) is reducible neither to an actor alone nor to a network...an actor network is simultaneously an actor whose activity is networking heterogeneous elements and a network that is able to redefine and transform what it is made of (Callon, 1987 p.93).

A further notion is that of mediated relationships where the presence of the human and non-human inform each other. Latour (1999) exemplifies this developed interaction through the process of tool making. Tools are designed, selected and built from a particular human framework, which contains notions of political, historical, sociological and semiotic values; this in turn directs the ways the tool works, and in turn creates particular outcomes. By its *weight of associations* (Latour 1999 p.179) the tool then confirms and extends these through the way it is constructed and acts, which Cordella points to as the *concept of circularity* (2010 p.16).

Because of this relational materiality, ANT has proven to be useful methodology for theorising and describing design and information infrastructures in both traditional and new media. Codella discusses the methods for understanding information technologies in the light of *design, deployment and management* and points to ANT as a useful method because it can take into account

‘...the interplay in the intricacy of the set of interconnected hardware, software, and procedural configurations deployed to support and enact pre-determined paths of behaviour in organisations and among users’.
(Cordella, 2010; Esnault, et.al, 2006)

ANT is presented as a method that ‘fosters the participation of heterogeneous stakeholders to the design process.’ (Esnault et al., 2006) Raff points to ANT as a useful tool to study the socio-technological relationship of graphic design artefacts, (2013) whilst Cypher and Richardson apply ANT methods to understand computer games as an aesthetic form shaped by both human and technological agencies. (2006) Furthering this understanding was the application of ideas from John Law (1992, 2009) particularly towards approaches to translation¹⁰ and by Boomen, looking at metaphor, materiality and the digital (Boomen, 2014). Of particular interest for this thesis is Bruno Latour’s own application of ANT to scientific drawings

within the context of scientific publication (Latour, 1986).

ANT allows for the complexities of illustration to be illuminated from within complex publishing settings, permitting the emergence of a concept of the illustration as a relational procedural work, which both acts and is acted upon. These settings define the illustration, or as Andrew Baker (illustrator for the *Times* and an academic) remarks, without it ‘the illustration is just a picture.’ (Hoogslag, 2012). He places the editorial illustration central stage, not as fixed object, but as an actor.

1.6 Thesis Structure

Following the Introduction, Chapter 2 positions the emergence of editorial illustration within the formative period of news illustration, the wood engraved illustrations in news periodicals that became popular in the latter part of the 19th century. They not only provided visual information and entertainment, but also insight and a capability for ideological and social comment.

The process of wood-engraving was a laborious method of handcrafted image making, based on specific aesthetic and technological processes that presented a unified and particular visual narrative culture. From 1880, with the invention of the halftone process, direct transfer of an image into printed mass media became possible. The halftone reduces production time and costs, but importantly it enabled the reproduction and inclusion of photography, a layout with more relational and bespoke positioning of image and text, and above all, it enabled the illustration to be directly reproduced from the illustrator’s own art work, without translation through the wood engraving process.

Forty years later, technological advances changed the formalised single visual language of wood engraving into two distinct languages: the evidential language of the news photograph and the reflective, interpretive language of columnists, commentators, and analysts which became the area where illustration could further develop. It is through this clear bifurcation of roles that I argue Editorial Illustration come into being.

Chapter 3 investigates the role that editorial illustration plays in the current printed newspaper context. It begins with a brief presentation of the key elements underpinning illustration in terms of the material and semiotic structures of newspaper-publishing. It not only includes printing technologies and the layout of the newspaper, but also the quality of the story and textuality itself. I reveal the fixed nature of the newspaper artefact and the semiotic implications of the linguistic modality that bring a particular manifestation of the editorial illustration into being. Using a case study of an editorial illustration from my own practice I introduce the concept of the editorial illustration’s role as a tool to facilitate deliberation, where deliberation is essential for the formation of knowledge. I establish

the attributes of illustration that support this process, highlight its material, translational, reflective and engaging characteristics and propose these characteristics as the basic elements for a model of the *constellation of four attributes*. Each quality is then described individually. These are set out as follows:

Manifestation: The capacity through the materiality of the illustration to refer and reveal the technological and material affordances of a specific platform. The editorial illustration points to the newspaper and all it represents in its final reproduced form, but also the manner in which it plays with and contrasts these affordances and uses them for semiosis.

Translation: The ability to translate the essential text (the non materialised story (Benjamin, 1992; Hayles 2002) into a poetic visual language (Kress and van Leeuwen, 2006; Hayles 2002, 2005) whilst simultaneously relating to the written story through both a dialectical proximity and a direct textual-visual relationship. (Jacobson, 2000; Barthes, 1977d) To achieve this it uses the readers' own coded language (Barthes, 1977c).

Reflection: The ability of the editorial illustration, as a relational object, to reflect all those who have a stake in the value of the image. In this section I discuss the producers of the publication, who contextualise and initiate the illustration, represented by the picture editor¹¹, and the journey of the materialisation and dematerialisation of the meaning of the illustration, which I call the *relay of intent*, based on the notions of *preferred reading* by Hall (1980). I discuss the story, represented by the written text and the intertextual relationship (Barthes, 1977d). Finally, I discuss the position of the illustrator, represented through the designated authorship, and that of the reader, who receives the illustration and is presumed to understand and appreciate this in the context of the overall publication.

Engagement: is the ability to use visual impact and rhetorical means to arrest the reader's attention and create an ideological bond (Hall, 1973). It is the quality of the Lacanian imagined *ideal* (Žižek, 1997-2007) in which the image is used to establish a bridge and then consolidate the bond between the readers' reality and the underlying ideological message of the publication.

I argue that a successful editorial illustration is the result of a particular constellation of four essential attributes. Where its role is not to provide additional information but rather to invite the reader into a space of deliberation; a space left open that is situated between editorial intent and

11. Within the structure of newspapers there are various positions that directly relate to the reviews, selection and briefing of photographs and/or illustrations for publication. These can vary per newspaper title and their internal structure. Most commonly used titles are picture editor, photo editor or art editor: or art director who tends to be more responsible for the visual style but often also for images or graphic design. But contact can also be directly with the editor or journalist. For the sake of clarity in this thesis in general I use the term picture editor.

the reader's existing knowledge. I present this constellation as having emerged out of a printed context, but question whether its currency is sustainable in the online context that is the dominant driver in the dissemination of editorial news and current events.

Chapter 4 presents a snapshot of current usage, technologies and issues around (visual) editorial content, image usage, presentation and the resulting technological disruptions currently shaping online communication and editorial news media. I describe and discuss a communications ecology that is caught between its technological achievements and its inability to provide space for deliberation, an essential dimension if information is to turn into knowledge. The chapter establishes how this affects the online use of traditional editorial illustration and how the dominant blog structure disables the editorial illustration's ability to function, whilst simultaneously enabling new *digitally native* forms of illustration to emerge, but at present mainly outside the context of news media websites.

In Chapter 5 I first present the key understanding of the illustration as an emergent practice and as a particular manifestation of textuality through extending the notion of material semiotic relationships investigated by Hayles (2002, 2005) in her research into the practice of Illustration. Then I explore the conditions that come from the intrinsic technological logic and materiality of the online communication context and whether, and if so, how, these new formations enable the editorial illustration to function. I present the key aspects of online digitality, which I argue are central in shaping the current horizon for online editorial illustration. (Manovich, 2002) I explore a method of digital manifestation, transcoding, which relates the properties of code and data, to the manifestation on the interface and the multi-mediatic appearance, and finally the key component of *online mediality*, where I describe the Internet, the online network. These are not only methods of structuring information, but also containers of the material properties that offer the aesthetic, experiential and semiotic agency to editorial illustration.

In the second section of this chapter I present four examples that suggest online editorial illustration use, including an emergent mode of data driven illustration, which is central to the research practice found in Chapter 6. In the next section, through these examples, I (re)examine the constellation of attributes investigated in Chapter 3, and explore the way they express these particular attributes through the lens of online materiality.

In the review of the **attribute of manifestation** the multimediality and the affordances of the network present both text and illustration as emergent and use the same material expressions but different modalities.

In the review of the **attribute of translation** I discuss the circulation of the illustration through the Internet, its expression and all the signifying elements, and how illustration can become a language in itself, a language

through which to critique the original story, as well as develop new strands of conversation.

The review of **attribute of reflection** examines a shift in the position of the publisher, the need for a consolidation of the ideological elements within the context of an illustrated work, for instance how the work is presented to the readers, and reveals a shift in the relationship with the reader. The reader has a more active and involved position, which allows different roles, from player, to distributor, to activated instrument used to complete the illustration's narrative.

And finally the review of the **attribute of engagement** equally points to the issues of consolidation of the ideological context, but here I focus on emergent (real-time) illustrated works that do not have the explicit presence of a written or oral text to which they can refer, in particular data driven illustration. This method of illustration, if it is to be understood as editorial illustration, needs to establish a relationship with something outside its frame and does this through using verifiable markers, through the use of streaming data and empathetic image elements. I pose the hypothesis that the continued presence of the four defining attributes suggests that editorial illustration remains a distinct mode, still capable of creating *the incompleteness* necessary for deliberation. Online it has taken new forms, which might warrant an understanding of this type of illustration as a distinct and developing new form of illustration.

Chapter 6 introduces the practice led dimension of this research. It consists of the description and the analysis of a case study, built from three interconnected studies, all of which explore aspects of the key concept of data driven illustration: a method of online illustration based on the creation and activation of illustrations through programmed data sets and/or live data streams, in which data and code act as both material and signifying elements. In the first study, *DataRabbits*, I explore behaviour enabled through live data and automation and the possibilities for narration. In the second case study entitled *Fatcat*, I explore meaningful relationships and behaviour enabled through data and automation. The third and final study, *100 Working Mice*, explores the complexities of multiple objects and various data streams orchestrated as part of a single programmed illustrated work. These experiments present data driven illustration as created through the interplay between the written instructions, external data and visual aesthetics. They extend all the attributes of editorial illustration through particular notions of a procedural aesthetic, in real-time action and duration. They also question the position of editorial ideology, the need for evidential veracity and the demands of presentation and engagement.

The practice brings particular attributes to the foreground through the media specificity of the online environment. It also suggests what needs to be investigated and whether these attributes have always been present, but latent, or whether they are particular to the online conditions. I conclude that this method of illustration has the potential to be successfully applied to a wide range of assignments, particularly where the subject is an ongoing situation determined by states of change and concerns systems that are multi-faceted and references that are data-rich. These subjects are plentiful in areas of socio-economics, environment and health. I also propose that more research is needed to explore the practical implementation of this method.

In the final Chapter 7, I conclude that the constellation of four attributes of editorial illustration is a useful conceptual structure to evaluate the role and current standing of editorial illustration. It brings to the fore the fact that illustration is a multimodal practice in a dialogical relation to the story it illustrates, where the illustration displays nomadic, temporal and durational properties that have become more apparent online, already present in the printed still image but never fully appreciated.

Online mediality can support these extended formations but only if illustration is understood as integrated and fully relational; what is illustrated and illustration is not distinct through materiality, but through the mode of dissemination.

Online editorial illustration might need to be explored as a distinct new form of illustration, born from a long tradition, with an inherent ability to create deliberation and to serve our wish to make sense of the world around us.

2 The Emergence of Editorial Illustration (1880 -1910)

This chapter sets out the historical background and key reference points for the positioning of editorial illustration. It establishes both a technological and a socio-historical context, focussing on the period between 1880-1910. This is when the halftone printing process enabled the first photographs to appear in printed newspapers. The resulting dual visual culture of the photographic image and the editorial illustration replaced the established practice and culture of using wood-engraved news illustrations. This forced the transformation of an already established practice of illustration into a far more expressive and personal approach through a visual language and would bring to the fore present and latent qualities that would make editorial illustration distinguishable from all other image types within periodicals.

This chapter explores, from a technological perspective, the transformation from wood-engraved illustrations to halftone editorial illustrations, through an evaluation of the 19th century news periodical. It presents the news periodical as both a pragmatic and ideological environment, where readers sought not only to discover new information but also familiarity. This was a publishing culture where events, competition and innovation, shaped production and creative processes and in turn formed the material expression and culture that defined news illustration.

The main reference point for this analysis is the *Illustrated London News*, the first illustrated newspaper which dominated the illustrated publishing market in the latter part of the 19th century (Reed, 1997).

Before the first edition of the *Illustrated London News* was published on the 14th of May 1842 there was the occasional illustration in newspapers, but most periodicals up until then had no images to speak of. Herbert Ingram, newsagent, printer and manufacturer of patent medicine (Beegan, 1995) noticed that even if there was just the simplest illustration in a paper, sales increased. He created a picture-dominated news weekly, based on illustrations specifically created to depict news events (Brown, 1992).

The *Illustrated London News* captured the popular imagination and its success soon spawned a host of other picture magazines; together with illustrated periodicals these became a central feature of Victorian popular culture. As the historian Lyn Pykett (1989) states:

‘...Far from being a mirror of Victorian culture, the periodicals have come to be seen as a central component of that culture- an active and integral part.’ (1989 p.102)

Pykett also cites Shattock and Wolff (1982) who note that:

‘The press in all its manifestations, became during the Victorian period the context within which people lived, worked and thought, and from which they derived their sense of the outside world.’

With growing readerships, continuous improvements in printing and production technologies, and the lowering of paper prices along with the abolition of the tax and duty on newspapers and paper during the 1850’s and early 1860’s (Baylen, 1992; Reed, 1997), illustrated newspapers became a profitable business¹. In 1855 there were more than five hundred newspaper titles in Britain alone. The period between 1860 to 1890 became known as a golden age for British newspapers and the sixties (1855-1870)², saw an equivalent successful period for wood-engraved illustration (Kooistra, n.d.).

2.1 Wood Engraving

In May 1880 the picture of Alexandra, the Princess of Wales, shows her embracing her two young sons after the boy’s first long journey away. This might be a depiction of the news event of the homecoming of the princes, but the two-page spread is more than anything the story of supreme motherly love. This image demonstrates approved emotional behaviour executed by well-behaved royals, but also the dress style of the princess.

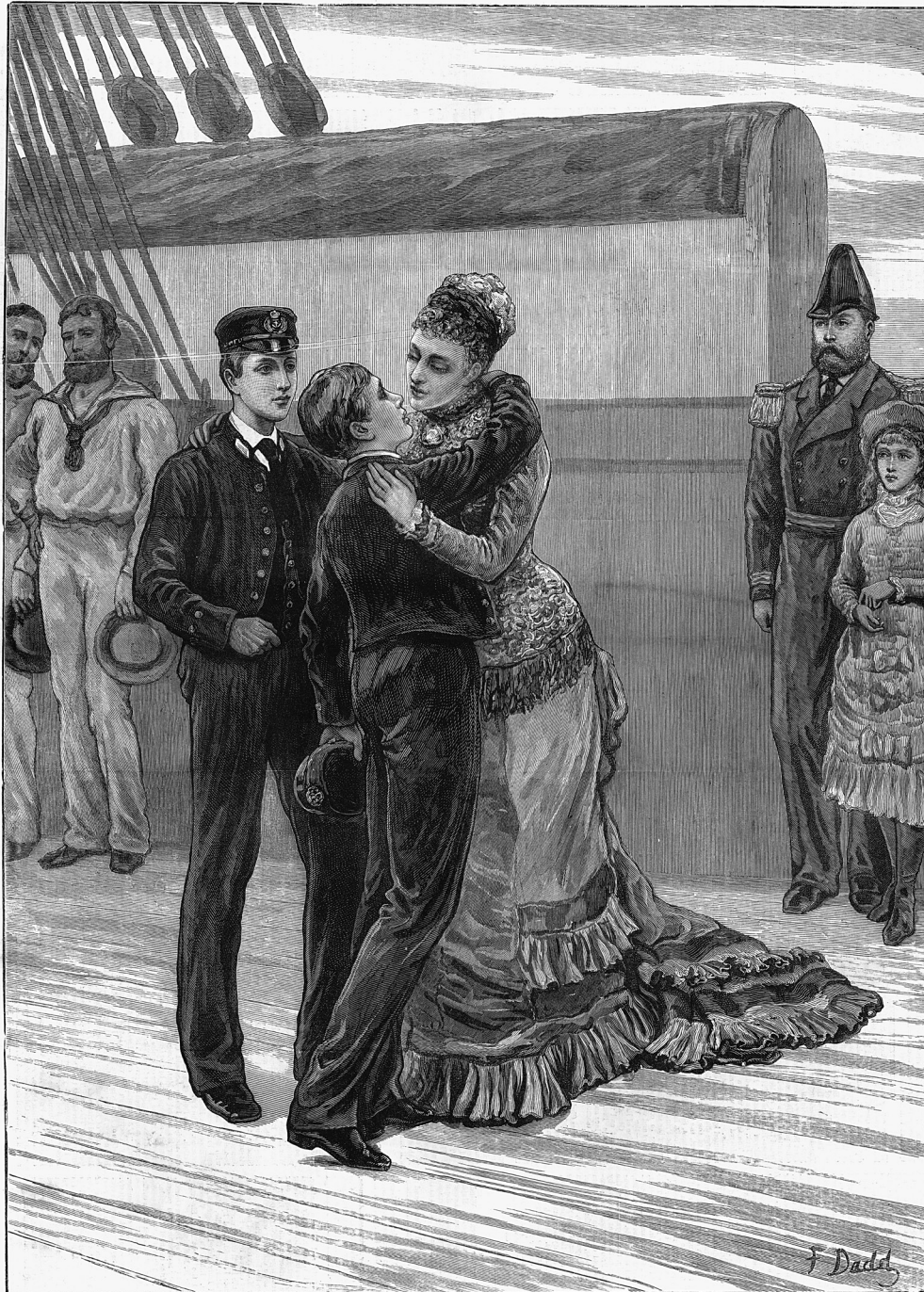
The ubiquitous production of images through wood engraving, set with its delicately carved line patterns, a particular mode of visual expression³, was shaped by early Victorian cultural values and the social aspirations of the makers and audience (Maidment, 2001). This particular visual aesthetic presented a new world, carefully composed, sanitised and dramatised in scenes that left no confusion as to what was meant to be seen, and how the reader was meant to interpret the scene (Dadd, 1880) (see also figure 2-1).

1. There were many kinds of illustrated papers, each created for a specified audience from: *The Athenaeum*, *Tit-Bits*, *The Graphic* or the *illustrated Police News*, or specialised periodicals like women’s magazines: *The Women’s Penny Paper*, *The Woman at Home* and *Hearth and Home*, children’s magazines: *Girl’s Own Paper*, *Boy’s Own paper* and *Our Little Dots- Pretty pictures* and *Stories for little girls and boys*; (semi) fictional sensationalists or penny dreadfuls, with their crime and angst stories such as: *Boy’s Leisure Hour*, *The Mysteries of London* and *Highwaymen* or satirical magazines such as: *Fun*, *Punch* and *Figaro* in London.

2. The popularity of illustrated papers created a mass of illustration work and gave rise to a host of popular illustrators, with sometimes near celebrity status, such as William Harvey, Kenny Meadows, W. B. Scott, William Dix, G. F. Sargent, W. H. Prior, John Gilbert, George and Robert Cruikshank, John Leech, Alfred Forrester (Crowquill), and S. Williams.

3. The *Illustrated London News* for instance claimed documentary realism as their representational mode, making wood engraving synonymous with claims for documentary accuracy in reportage (Kooista, n.d.-p9), though Beegan (2008) notes that ‘since the wood engravings of the 1840’s, the illustration of news had not been expected to be slavishly realistic’. Whilst in *Punch*, the use of caricature was used in forming public opinion (2008 pp.11)

172.—THE ILLUSTRATED LONDON NEWS, MAY 15, 1880.—173



WELCOME HOME!

H.R.H. THE PRINCESS OF WALES MEETING THE ROYAL PRINCES ON BOARD H.M.S. BACHANTE.
SEE NEXT PAGE.

Figure 2-1: Frank Dadd, *WELCOME HOME! H.R.H. THE PRINCESS OF WALES MEETING THE ROYAL PRINCES ON BOARD THE HMS BACHANTE*, illustration for the *Illustrated London News*. two page spread, page: 472-473, May 15th 1880.

Sinnema alluding to the rhetoric of a Victorian news engraving of a young poor farm laborer (a crow boy) points out that:

‘...the representation of the crow-boy is constructed out of desire: it is not the mimetic reproduction of the original, breathing being. What the engraved boy ‘is’, is simply this: that what the Illustrated London News proprietors, artist, engravers and readers most likely believed a picture of a crowboy should be.’ (Sinnema, 1998 p. 47)

Particularly in early-illustrated periodicals, illustration and text were often on separate pages. The only text present with the image would be title caption, explicating the event and the main content of the image ⁴. If text and image could be placed on the same spread or in close proximity, they would reinforce each other where both were created within the same ideology (Sinnema, 1998). But in most cases the illustration would operate relatively independently of the written text.

The news illustration as a form of visual storytelling was full of visual clues to presumed pre-existing knowledge, to desired lifestyle and contemporary values, but filtered through the news values of the periodical. The task of illustration was to mediate between the event, the written text, and the mind-set of the reader, to fall within the boundaries of visual acceptability in representation but also to depict values set by the periodical. Rather than be faithful to the event, they had to be believable renditions for the viewer (Sinnema, 1998; Kooistra, n.d.; Beegan, 2008).

2.2 The Wood Engraving Process and Technologies

The popularity of these illustrations, competition and the laborious method of production that required highly skilled craftsmen made for a cost-conscious mass-periodical industry that was driven to remain at the pinnacle of what was technically possible (Beegan, 2008).

The following brief summary of the wood engraving process for news illustration gives an insight into the complexities and resourcefulness of this method of image creation. It shows how this mode of production was a collective effort, not towards the individual wood engraved artwork but towards a final printed result as part of, and reproduced in, a news medium. The process of wood engraving started with the sketch, notes and instructions for the engraving, made on location at the news event and/or in the studio of

4. In a small sample quantitative research, and visualising the layouts diagrammatically, revealing the text and picture usage of the Illustrated London News, May editions from 1880, 1890, 1900, and 1910, it became clear that most illustration would be positioned on separate pages from the text. In 1880 there would be predominantly no integration of image and text on the pages, whilst in 1910 the pages were still more than fifty percent illustration only (see Volume 2 pp.4-27) quantitative visualisation on illustration usage 1880-1910).

the illustrator, often referred to as the *special artist*⁵. Specialist draughtsmen at the newspaper studio then translated the sketch and notes into a detailed, but reversed and mirror version of the drawings on the surface of a block of *endgrain* boxwood. The boxwood pieces would be small, so for larger engravings, the drawing would be divided over a series of boxwood pieces bolted together. These pieces could be separated and distributed between several engravers⁶ to speed up production. The highly skilled and specialised wood engravers would cut out the negative image in a pattern of thin lines. Once engraved, the blocks would be pieced together again by the superintending artist who would retouch and prepare for printing (Jackson, 1885; Ruskin, 1872).

Photographic images, even though they could not yet be directly reproduced in print, (Beegan, 2008) were already directly transferred on to the wood in portraiture, the representations of objects and architecture or as a direct copy of a quality sketch by the illustrator, and would be instant templates for cutting, but in other situations, the image would be predominantly created by specialist draughtsmen. Often they would specialise in particular subjects and in the absence of a visual reference they would use their own ingenuity to make up missing fragments or complete a composition. This could mean using anything from their own imagination, fragments of existing artworks, photographs and drawings, to mixing and matching scenes with backgrounds, foliage, people and objects.

News illustration was a collaborative product of a creative industry with its own hierarchies, specialities, chains of supply and demand, composed of illustrators, wood engravers, editors, printers, publishers and readers. Though there was certainly an appreciation of quality (Jackson, 1885) and

5. M. Jackson, himself the son of the master engraver, describes in a very vivid way what it meant to be a *special artist*, an illustrator-reporter. Special artists were sent out, or went on their own accord to report news events. Illustrators were sent out to record wars, expeditions, exotic locations and so on. They would be given special permission and allocated the best positions to record what was happening.

Sketches were treated as evidence and regarded with great suspicion by authorities and incriminated parties. This forced the illustrators to be quite ingenious in the way they would sketch, and the paper on which they sketched was *ready to be eaten* when in danger.

'Wherever there is any moving accident by flood or field the special artist of the illustrated newspaper is found taking notes. No event of interest escapes his ever ready pencil. He undergoes fatigues, overcomes formidable difficulties and often incurs personal danger in fulfilling his mission. On the eve of a battle he will sleep on the bare ground wrapped in a blanket or waterproof sheet, and he will ride all night through hostile country to catch homeward mail...' (Jackson, 1885 p.328)

There was a certain unspoken hierarchy where the artist or special artist would hold higher status than the draughtsmen or engraver. Though this hierarchy was not formal it was visible in payment and standing. Not all illustrations were accredited but if they were, the *special artist* was the one mentioned as the creator of images, whilst draughtsmen were anonymous.

A *special artist* would earn a lot and would be widely known by the public, yet his status as fine artist was, according to Peter Sinnema, heavily contested (Sinnema, 1998). William Chatto, master engraver, states that it was 'not unusual for many second and third-rate painters, when applied for a drawing or a woodcut, to speak slightly of the art, and to decline to furnish the design required' (Chatto, 1839 p. 672).

Especially in event and war reportage part of the news value would lie in the speed of transmission. All manners of transport were used to get the sketches to the publishers before the competition did. Balloons, boots, trains, pigeons and couriers all were used 'until some method is invented of sending sketches by electricity the pictorial press must endure this disadvantage, but in the meantime it spare no pains to overtake the march of events...' (Jackson, 1885).

6. Engravers would not necessarily work in the newspaper studios, or in the same workshop and could not negotiate with each other during the engraving process.

individual special artists (Beegan, 2008), the method of working predominantly produced a generic style of expression and editors had no problem with changing content despite the individual aesthetic expression of the illustrator or the verity held within a sketch.

In terms of production all techniques seemed to be accepted, as long as it could deliver the most effective image with the strongest visual impact, set against tight newspaper deadlines (Jackson, 1885; Beegan, 2008)(see figure 2-2). Jackson, himself an engraver, describes this editorial process as not necessarily harming the value of the image:

‘Sometimes the sketch to be dealt with is the production of an amateur, or is so hastily or indifferently done that it had to be remodelled or rearranged in drawing it on the wood. Faulty or objectionable portions have to be left out or subdued, and perhaps a point in the sketch that is quite subordinate, is brought forward and made to form a prominent part of the picture. All this had to be done without doing violence to the general truth of the representation and with due consideration for the particular conditions of the moment, such as the amount of finish and distribution of light and shade suitable for rapid engraving and printing.’ (Jackson, 1885 p.317)

THE ILLUSTRATED LONDON NEWS, JUNE 2, 1900.—743



THE BOSCH-VARK, OR SOUTH AFRICAN RIVER HOG.

The African wild hog frequents river banks and wet places: the West African variety is notable for its pencilled ears.

Figure 2-2: Lascelles, *The Boch Vark, or South African River Hog*, illustration for the Illustrated London News; single page, page 743, June 2nd 1900.

Original caption: The Boch Vark, or South African River Hog. The African wild hog frequents river banks and wet places: the West African variety is notable for its pencilled ears.

This is a halftone printed image, where the matrix dots of the screen allow for tonality. On close inspection, the amount of retouching and recreating that has been used to enhance a photographic image is clearly visible. Nearly the entire background, the contours and some parts of the animal are reimagined, enhanced or manipulated, using a mixture of techniques.

2.3 Halftone Printing Processes

The intended function of the image was not so much artistic reproduction, rather the goal was to develop images that could be representations of the real world. In this competitive environment, a reproduced photographic and tonal image would underline the paper's news-worthiness as much as it diversified the range of imagery on offer. The technology that was eventually able to offer the ability to reproduce photographs and tonality in mass print productions was the halftone printing process. This method of image reproduction translated the surface of the original image into a pattern of barely visible dots or lines which, printed close together and in varying amounts, could replicate a sense of tone, (Reed, 1997)(see figure 2-3a and 2-3b).



Left figure 2-3a: wood engraving: where the engraved lines are clearly distinct, image detail from figure 2-1. Right figure 2-3b: halftone process image: just visible are the small dots of the screen allowing original tonality of the image to come through, image detail from figure 2-4.

Though the first successful photographic reproduction appeared in an American newspaper⁷ in 1880 (Reed, 1997), it would be at least another thirty years for the wood-engraving industry to be overtaken in the United States and Britain and another twenty years for it to be eradicated (Reed, 1997). It took this time for the established image culture to slowly adapt to a visual language that was enabled through the halftone print⁸. This was not only because a lot of photographic material was of poor quality, but also because readers were not used to 'reading' a photograph and found them chaotic and noisy (Beegan, 2008).

7. According to David Reed (1997) the first appearance of a halftone reproduction in a periodical seems to have occurred on October the 30th 1869; a portrait of Prince Arthur, youngest son of Queen Victoria, in the *Canadian Illustrated News*. William Leggo and George E Desbarats were responsible for the technique, so called Leggotype. Leggo and Desbarats later moved to New York and in 1873 founded the *New York Daily Graphic*. This illustrated paper is more widely accepted as publishing the first photo reproduction in the edition of March 4th, 1880, using a derivative of the technique they developed.

8. Resulting from the same small sample quantitative research: In 1880 around forty per cent of the content of the ILN consisted of wood engraved images, the rest was editorial text and advertising. They showed portraits of politicians and important personae, royal and political events, foreign news, mixed with romantic interpretations of themes like the seasons, or Irish paupers. Thirty years later the ILN had grown in size, just under seventy per cent of the content would be pictures of which just under half were photographs. In 1910 the themes were still largely the same, but all the images were now printed in line process or halftone screen. Photographic and illustrated images were present in equal amounts.

The halftone screen introduced a new visual language and new image reproduction processes (Szarkowski, 1990). Together with technological and mechanical developments in typesetting, portable photography, paper making as well as printing itself, the halftone screen gave rise to new possibilities for layout, the ability to scale and the use of more images in response to the growing availability of ready photographic images and also partly as a consequence of a new role within the magazine making industry; that of the art director (Reed, 1997). Gradually from one single visual expression the image culture within news publications slowly transformed into two: the photographic news image and what I identify as the editorial illustration.

As for the practice of illustration, it suddenly became possible for the original artworks to be directly reproduced, cutting out the layer of interpretation by wood engravers with their thin lines. The halftone process could directly reproduce the illustrator's own expressive marks. That this was appreciated shines through the appreciation of Josephs Pennel's expressive illustration in the special remembrance edition of *The Illustrated London News*, marking the death of King Edward VII in May 1910 as figure 2-4 shows. The main image caption reads: 'THE HOUSE OF MOURNING: A GREAT ARTIST'S IMPRESSION - FROM A SKETCH BY JOSEPH PENNELL' (in capital letters), and below the illustration:

'Then black despair, the shadow of a starless night, was thrown over the world'- Buckingham Palace immediately after King Edward's death- a sketch by Joseph Pennell...

...We feel sure that our readers will be particularly interested in this drawing, showing the impression made upon the mind of a famous artist at the moment of great bereavement. A moment at which all those of King Edward's subjects who had heard the sad news were suffering from a sense of irreparable personal loss. The impression is all the more interesting in that it was set down while it was fresh in memory, and is not the result of methodical setting down to a task, or to the production of a picture illustrating an event.' (*Illustrated London News*, 1910)

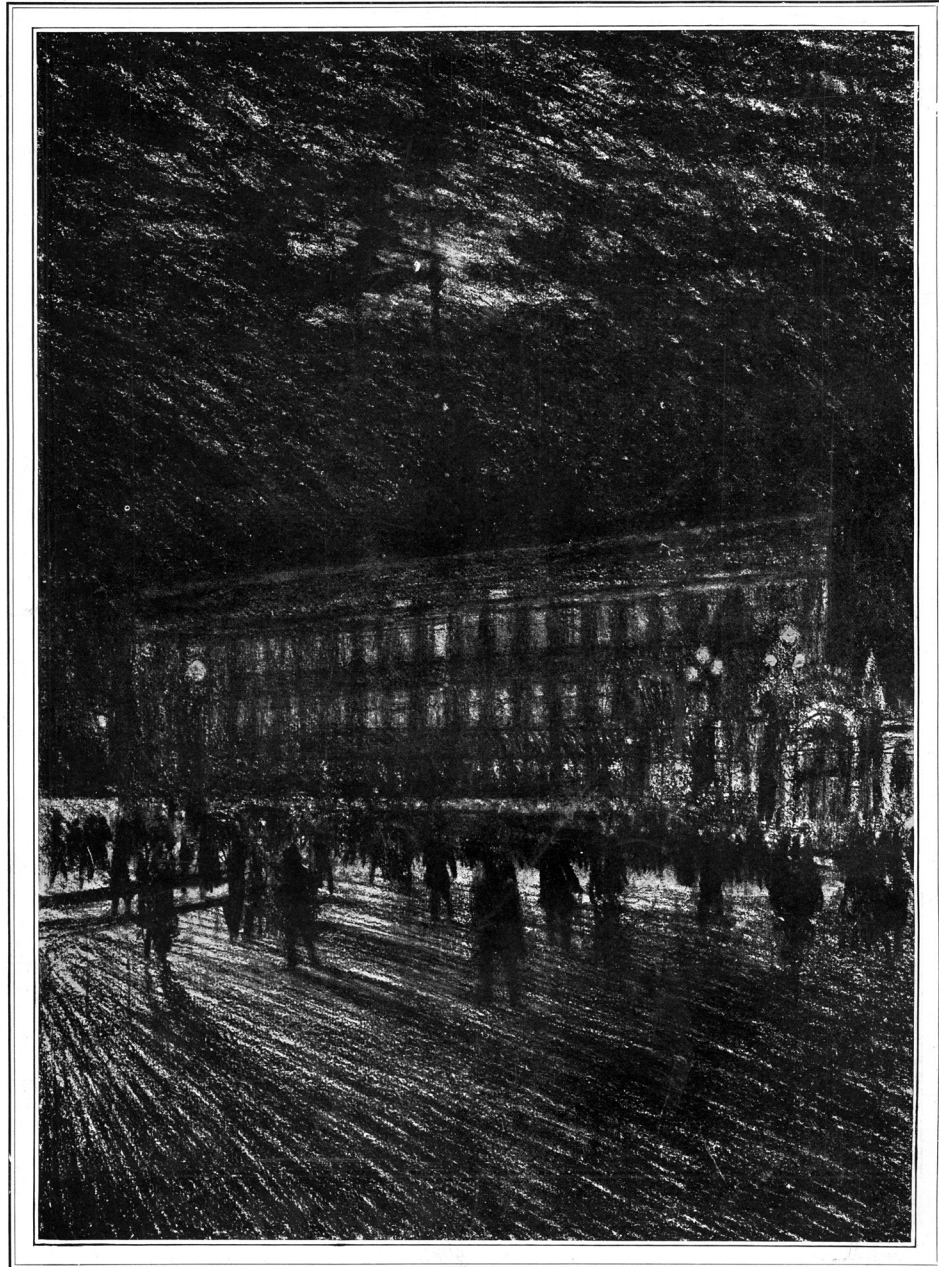
No longer the default option, illustration needed to be considered on its merits, for what it could bring to the newspaper and the news story. Gradually, the illustration carved out a distinctive role within newspaper and magazine publishing⁹. Editorial illustration had become a specialist field.

9. In 1910 most magazines used artwork to illustrate fiction and verse, with photographs linked to factual articles, except for the *Post* (Reed, 1997).

THE ILLUSTRATED LONDON NEWS, MAY 14, 1910.—708

THE HOUSE OF MOURNING: A GREAT ARTIST'S IMPRESSION.

FROM THE SKETCH BY JOSEPH PENNELL.



"THEN BLACK DESPAIR, THE SHADOW OF A STARLESS NIGHT, WAS THROWN OVER THE WORLD": BUCKINGHAM PALACE IMMEDIATELY AFTER KING EDWARD'S DEATH—A SKETCH BY JOSEPH PENNELL.

We feel sure that our readers will be particularly interested in this drawing, as showing the impression made upon the mind of a famous artist at a moment of great national bereavement, a moment at which all those of King Edward's subjects who had heard the sad news were suffering from a sense of irreparable personal loss. The impression is all the more interesting in that it was set down while it was fresh in the memory, and is not the result of a methodical setting down to a task, or to the production of a picture illustrating an event.

Figure 2-4: Joseph Pennell, *THE HOUSE OF MOURNING: A GREAT ARTIST'S IMPRESSION - FROM A SKETCH BY JOSEPH PENNELL*, illustration for the *Illustrated London News*, single page; Page number: 708, May 14th 1910.

caption above: THE HOUSE OF MOURNING: A GREAT ARTIST'S IMPRESSION- FROM A SKETCH BY JOSEPH PENNELL. below: THEN BLACK DESPAIR, THE SHADOW OF STARLESS NIGHT, WAS THROWN OVER THE WORLD': BUCKINGHAM PALACE IMMEDIATELY AFTER KING EDWARDS DEATH- A SKETCH BY JOSEPH PENNELL

2.4 The Emergence of the Role of Editorial Illustration

Now that the illustration no longer needed to be evidential and its expression could be more diverse, it could become more explorative and subjective in form through mark-making, mood, symbols and expressions. Editorial Illustration became a personal interpretation and as a result the final printed image could be a direct translation of the illustrator's own making.

Yet illustration could still be defined as representing a notion of verity, but this time truth as a collectively held belief. Where for instance the sketch might lack precision, it was hailed for its ability to convey urgency, directness of emotion and observation (Beaudelaire, 1860). The material expression of illustrators, their visual response to their subject, became as much part of the meaning signified by the illustration as the content itself. The quality of selective observation that characterises illustration allowed a honing in on what was relevant and, in doing so, removed any indexical noise. In 1910, the editorial illustrator was able to transform his/her role as the presenter of subjective facts into the translator-poet of underlying stories and messages.

The journey from the singular wood engraved news illustration in the first illustrated newspaper towards a dual visual culture of photography and editorial illustration at the end of the 19th century was a pragmatic search for the ultimate mode of visual representation in printed media. This turned out not just to be the photograph, the evidential witness of events that was destined to become the dominant image medium, as there was still a role for using illustration. The continuation of illustration also points to a second need, not more substantiation, but of making meaning. This was something that had been present as an a quality of news illustration all along, but through its transformation into editorial illustration had become prominent. These images did not offer more information, but through their particular way of translating the essence of the story, through their particular ways of materialisation, signification and addressing the reader, they brought something the reader could recognise, something that could help them make sense of the world.

In the next chapter, I discuss the particular role of editorial illustration in present day printed news media. I examine editorial illustration and its agencies, defined as a series of core attributes (manifestation, translation, reflection and engagement). These attributes were already extant in the wood engraved news illustration, but could only come to prominence through the material and technological conditions of news publishing that was shaped by halftone printing technologies.

3 The Model of Editorial Illustration within the Context of Contemporary Printed Newspapers

‘Its important that the illustrator does not only take the elements and rearranges them, but to visualise, to bring a voice they must supply synthesis, grab the audience, create engagement. Create another silent strand of meaning, that wasn’t there before.’

(Geoff Granfield, illustrator Course Director of BA (Hons) Illustration and Animation at Kingston University, London, 2011 (interview))

In this chapter I develop a model of editorial illustration through discussion of its role and position within the tradition of contemporary printed newspapers. I argue that the core role of the illustration is to create alternative insights into the story that asks the reader not only to consider the article to be read, but also supports the reader in the creation of meaning. In this way, the illustration is both a tool for visual navigation and a tool of translation, reflection and engagement.

I develop this model through first an exploration of key attributes underpinning illustration and its forms of agency within the socio-economic structures of the newspaper-publishing context. I specifically look at the material and technological construction of the newspaper and its semiotic implications. The model envisages a constellation¹ of four core attributes. These operate within a specific set of relations and are present in varying forms within each editorial illustration, but differing in weightings and intensities.

I propose and discuss a constellation of four attributes, which may be defined as follows:

1) Manifestation; the capacity of the editorial illustration through materiality (Kress and van Leeuwen, 2006) within the printed context, to refer to and reveal the technological and material affordances of a specific platform. It points to the newspaper and all it represents, not just when the illustration comes into being in its final reproduced form, but also in the methods and considerations in the creation of the artwork.

2) Translation: is the ability of the editorial illustration to visualise the essence of the story, from idea to image, whilst also relating to the written story through a dialectical proximity. Editorial illustration uses visual language the reader can relate to.

3) Reflection: concerns the ability of the editorial illustration to reflect all those who have a stake in the value of the image. This starts with the editorial stance as it is commissioned within the ideological setting of the publication, then the articulation of the writer’s story, the articulation of the illustrators

1. Constellation suggests a relative position of objects. Referring to the ‘origin of the astronomic term which denotes the relative positions of the ‘stars’’. (Oxford Dictionaries, 2014) The term also indicates a possibility for relational change. Where constellation of stars appears fixed, individual stars, though over periods of thousands of years, are in fact moving in relation to the Sun.

authorship and finally the reflection of the readers through the use of their visual idiom, values and ideas.

4) Engagement: The ability to use visual impact and rhetorical means to arrest the reader's attention and create an ideological bond. Though the involvement starts with the image itself, development is through the related textual story.

I conclude that given the particular limited conditions in which the illustration is presented, and the particular role of signification the illustration is given, illustration is, or can be, a tool of empowerment, a tool for deliberation.

In the chapter each attribute is introduced and explored more fully through following one specific case study which was developed as part of practice-led research for this thesis. The case study enabled me to critically engage with questions of material, semiotic content, and the question of audience/readership and/or relations between audience and text.

Importantly, presented alongside the case study, a series of applied examples created by other illustrators, that further show how these attributes operate within the traditional context of the printed newspaper publishing. This chapter evidences the development of the concepts behind these attributes, and as applied help to inform a discussion on the transformation of editorial illustration through new technologies as found in Chapters 4, 5 and 6.

3.1 The Limited Conditions of Print

Newspapers present news stories, constructed narratives, based on facts, opinion and analysis, which are told in what McLuhan calls 'mosaic form' (2001 p.222). Stories that are based on text and pictures, that compliment each other to advance the narratives (Barnhurst and Nerone, 2000). Text is dominant and essential, pictures are optional, but when they are used they add new dimensions of meaning to the text (Hall, 1973). The images either foreground the news value; the evidence of the events (these are most often news photographs though could also be explanatory illustrations such as diagrams) or foreground the reflective; the ideological or subjective nature of the story, which can be photographs or illustrations. Editorial illustration sits squarely within the second group, where it is mostly found with analytical reflection on current issues and subjective opinion, alongside the comment or debate columns, lifestyle and review sections and supplements, as theorists, experts and expert practitioners in editorial illustration note (Grove, 2009; Heller, 2000; Kraus, 2009; Male 2007). These are the sections where the editorial voice is most strongly represented. Here are the questions asked and answers suggested that bind an imagined community of readers with the publication.

Within these contexts the illustration functions as tool to enhance readability in terms of visual navigation but more importantly, it invites reading and offers deliberation, through creating a particular expressive form of visual mediation between story, reader and paper. Through the *hand and mind* of the illustrator, the editorial illustration is an important part of the process of creating of meaning.

The traditional newspaper context of the editorial illustration is a structure shaped not only by the possibilities but also by the limitations of its material conditions, technological and social-economic make-up, as Kittler argued was the case for all media (Kittler, 1996; 1999). For the newspaper perhaps the most obvious restriction is the news-cycle, which is a production process that adheres to strict fixed time cycles to produce a next edition; of which the daily or weekly are most common. This cycle sets limits to what can be printed, not just through editorial capacity and direction, or through design and lay-out to enable readability, but also through the material restrictions of paper and printing technologies.

But beyond the news cycle and print production, restrictions arise from the nature of written language itself, as very little of the totality of information that surrounds us, such as sounds, images, visions or emotions and abstract ideas can be fully expressed through written text (Kittler, 1999). News stories, like all written text, are caught up in the discrete symbols of the (typeset) alphabet (Kittler, 1999), the syntax of sentences (Barthes, 1977a, 1977b; Kress and van Leeuwen, 2006), the linear narrative (Kittler, 1999; Barthes, 1977a, 1977b; Hayles, 2005) and the structure of linguistic language (Barthes, 1977). Textuality and narrative construction (Hayles, 2003; 2005; Kress and van Leeuwen, 2006) can only convey certain kinds of information and a certain type of understanding (Barthes, 1977a, 1977b). This is further limited through the cultural, juridical and political rules that determine what can be expressed. In the end to create a coherent and arresting story, a selection must be made (Barthes, 1977a, 1977b).

This does not ultimately determine the interpretation of text, as the reader is capable of reading between the lines. McGann (1991) describes this cognition process as *radial reading* where the possibility is always present to read beyond the self-contained message and expose relationships to other texts, contexts and to the act of reading itself. This is a form of radial understanding, which puts the reader in a position to respond to the text's often hidden, discursive acts and its role in the intertextual economy.

What in words remains incomplete, a gap², can only to a degree be compensated for or extended through visual media (Barthes, 1977c, 1977d; Kittler, 1999). But conversely these visual media, images, are comprehended through our visual understanding and cannot fully be captured in words (Kress and van Leeuwen, 2006). This not only gives an alternative informational value, but also creates a *grey area* of interpretation, where

the meaning expressed in illustration is unfixable in words. The newspaper's shorthand not only invites this particular reading (Deegan and Sutherland, 2009) but also uses the visual and the relation between image and text, the intertextuality to direct this understanding (Barthes, 1977c, 1977d; Hall, 1973).

Here the photograph anchors the visual understanding to its semblance of reality with its indexical bias (Barthes, 1977c, 1977d; Hall, 1973). But the illustration, like text, is constructed, and equally based on selective symbolic representation that deliberately exploits the gap of interpretation between the written and the constructed-visual. It is in this gap that the readers are invited to make up their minds. It is within this gap that readers are invited to bring their own experiences and meanings to the work.

It is not the role of the illustration, in relation to its accompanying story, to dictate or evidence a meaning, but more subtly, to support the reader in the development of meaning, using visual means such as iconology, visual metaphor, visual narrative and material expression (Barthes, 1977c, 1977d; Brazell and Davies, 2013, 2014; Kraus, 2009; Crow, 2010; Male 2007). The editorial illustration can only suggest to the reader, the direction for a particular interpretation. Never truly definitive, the editorial illustration presents an open interpretation, that induces the reader to internalise, to reflect, and to deliberate³.

3.2 Towards a Model of Editorial Illustration

To understand what allows the editorial illustration such interpretive visual reading requires an understanding of its agencies, their significance and relationship between them within the illustration itself. To this end I propose a model of editorial illustration that can be understood as a relation between and through four attributes, a constellation of *core attributes* that are defining all editorial illustration.

The presence of these attributes was introduced in Chapter 2 as part of a brief historical survey of editorial illustration and will be discussed further in the upcoming chapters in relationship to online media materiality. In summary, the identifiable attributes are: *manifestation*: signification through materiality; *translation*: signification through language; *reflection*:

2. The coming together of multimedia signals into a single fundamental digital language is a notion Friedrich Kittler (1999). He argues that up until recent, information signals could only be recorded and send separately; Sound recording equipment for audio signals, image recording equipment for visual signals, language recording equipment for linguistic signals. But none of them individually could fully represent an original state, the totality of experience and each would leave gaps for the audience to interpret themselves. But combining these tools in multi-media experiences, creates a potential for these gaps to filled, where sensuous recordings would overlap. The networked computer, at this moment, is as near as we are going to get in filling these gaps. But Kittler presents the experiences as eyewash where he places the digital structure as the real fundamental language (Kittler, 1999 p.1)

3. I describe the totality of the experience of the illustration as deliberation, rather than the more commonly used term reflection. In this thesis reflection is one of the qualities of the editorial illustration, which I discuss. Deliberation is defined as: careful consideration before decision or leisureliness of movement or action; slowness. (Oxford Dictionaries,2014)

signification through the social and *engagement*: signification through ideology. All form an integral part of the illustration, but each quality can be present with different weights and intensities, and aspects of one quality can be part of another. For instance, the position of the reader is a language concern, a social concern and an ideological concern, but can be viewed from the perspectives of three different attributes. I will now turn to analysing these attributes specifically in relationship to my own practice in the work I undertook as an illustrator for the *NRC*, a Dutch national newspaper.

3.3 Case: the Illustration of a Newspaper Article

In March 2010 I was commissioned to create an editorial illustration for a Dutch broadsheet newspaper the *NRC*, a paper with a '*highly-educated independent and open minded*' readership⁴ (NRC media, 2013) known for its commentary and news analysis, carefully considered use of visuals and its regular use of illustration.

The illustration was commissioned to accompany the final analysis following defining courts ruling from Tuesday 17th of March 2010, in a case of the State versus *Lucia de B.* - a paediatric nurse convicted for serial murder of seven patients in her care. Promoted by the findings of the court, public pressure instigated the reopening of a previous case with the same defendant. The court ruled that a gross miscarriage of justice had been committed and as a result, the nurse, Lucia de B. was exonerated. The entire matter lasted eight years and remained in the public eye throughout this period (de Noo, 2010; NOVA, 2007; Associated Press, 2010). The final in-depth analysis was given a prime position within the newspaper and within their design format and content approach, it was an unspoken editorial policy, that an article of this prominence and length warranted a visual. Illustration was chosen for the specific reasons that with reporting of court case the suspect is never shown, next to the fact that the subject matter, the failing juridical system was very difficult to capture in a photograph (Akkeren, 2014 (interview)). According to van Akkeren, the picture editor: 'An illustration was able to give more power to the subject and the presentation as a whole would get an extra layer.' (Akkeren, 2014 (interview))

The newspaper analysis was to be published on Saturday the 21st of March in an extended weekend edition. It would be placed on page two, the traditional section for national news and news analysis, a position where in the Saturday edition always would feature a lengthy analysis. Because of the nature of this particular crime and the lengthy time it had been part of the

4. In January 2011 The readership of the *NRC* was: 201619 for the printed edition. In comparison with the most read news title de Telegraaf: 618876 (HOI, institute for Media Auditing, 2013).

public interest and this article would be typical for such position (Akkeren, 2014 (interview)). This left five days for writing, creating a visual and designing the layout, which was considered an average length of time (Akkeren, 2014 (interview)).

At that time I was a regular freelance contributor to the NRC and worked closely with one Paula van Akkeren, who was aware of my conceptual and visual approach, and professional aptitude. According to van Akkeren I was chosen because I had: ‘proven in the past to be in sync with the subject. In other words: capable to grasp the topic without being cartoonesque, without being superficial and without being too explanatory’ (Akkeren, 2014 (interview)). I was commissioned on Wednesday the 18th of March in the afternoon. At that point the article was not yet finished, but a synopsis was discussed as well as some relevant Internet links as research material. The next day I receive the first draft. Further discussions took place between myself and the editor including determining specific parameters for the illustration; the aspect ratio and minimum size of the image. The deadline, Friday afternoon on the 20th of March. Based on a trust built up over our long working relationship, a common moment of editorial intervention, the sketch phase, was omitted. The first time the editor would see the illustration would be at the deadline, there was no room for error⁵.

The final printed page contained two articles and one advertisement: at the bottom of the page, was a smaller text-only story: *David kon er niet meer tegen*⁶; positioned to its left, was an advertisement for holiday homes; and above, occupying almost three quarters of the page, the main illustrated article. Visually the layout of the article created one large block of approximately two equal parts of image and text. To the left, the text consisted of a content marker *Justitie* (Justice), title, header and the story, unfolding over four columns of which one, slightly tinted, contained a time line. On the other side, the illustration.

The illustration presented an isolated scene with two female characters. One large cypher like silhouette raising her sword with one hand, whilst the other she is holding down a seated blindfolded woman. The seated woman is dressed in a white uniform, she has one hand behind her back, whilst the other holds a delicate empty balance in front of her.

The case study introduced here will be further developed through discussion of the attributes, and illustrated through works by other illustrators.

5. In this case what matters more is the designer! He or she is dealing with the balance of text and form. At the NRC, the author and the final editor trust the designer and the commissioner of the illustration. With such an article (the article of the case study), everybody is aware of each others work. If it is last minute, the ‘trust’ in a good outcome is common practice. This can only be done based on earlier proven positive contributions.

6. translates as: David couldn’t stand it anymore: a news story about the suicide of a bullied schoolboy.

3.4 Manifestation- Attributes of the Material

What I call *manifestation* is in print the visualising quality, where the experience of the image, other than its content (Flusser and Amelunxen, 2000) points to the material relationship with the technology and materiality of the platform through which the illustration comes into being, where a medium always determines the powers of expression of the media it contains (McLuhan, 2001; Kittler, 1999, 1996; Galloway, 2012). Kress and van Leeuwen point out that ‘dependence on technology may be one of the strongest features of graphically realised semiotics’ (2006 p.217) and describe the dual process of semiosis (2006 p.217) that comes from both the production processes⁷ and reproduction process⁸ (2006). In the case of the illustration this includes the artwork, the unreproduced production, and its *transcoded* reproduced final version in the newspaper.

The artwork has on one level been instilled with certain meaning, through the illustrator’s style, approach to the briefing and his or her own expressive attributes, but on another level the illustrator needs to consider a second *semiosis* that still needs to be completed, through a design and layout process and the final reproduction. Traces of this practice are particularly visible in non-digital artworks where in some cases the illustrator makes colour tests, crop marks or written instructions in the margins of the artwork.

In the case of my approach for the *NRC* newspaper, the method of illustration was chosen by the picture editor for reasons of impact and distinction. The use of illustration and photography, for example, allowed me to balance the iconic and the specific. As the image-maker, I was aware of the properties of the printed newspaper⁹. For instance, with newsprint, the paper’s material and size has a certain colouring and saturation that softens colours and lines.

But as an illustrator, I knew the limits of my influence on the final lay-out; I would not have a say over the final positioning, but at the same time I knew that by making the image ratio based on a strong vertical, I could push the layout in a particular direction. The available time and honorarium determined, to a degree, the materials I could use and the time spent on the work. For instance, I used myself as the model for the pose of the seated woman and re-used but manipulated an image of the statue of Lady Justice found in my archive. Due to the availability of digitally networked upload services I could continue the creative process up until the last moment in the production process of the newspaper.

7. creation through the technologies, articulated by the human hand. (Kress and van Leeuwen, 2006: 217)

8. which can contain aspects of human and automated processes.

9. For contemporary newspapers the print production technologies are enhanced through digitisation but the principle method of image reproduction is still based on the halftone process. Full colour, page design and image creation software have automated and extended expressive, aesthetic and intertextual options and both the creative and supply networks have been delocalised and become faster, yet the nature of editorial illustration’s forms of agency have not fundamentally changed.

As demonstrated by this case study, the creation of an artwork relies on the expectations of certain affordances and limitations coming from the reproduction process, primarily those limitations through design practice, visual culture, economy, time and transmission. This experience appears to be shared with others involved in editorial illustration professionally. For example Matt Kenyon, regular illustrator for the Guardian, a newspaper based in the United Kingdom, pointed out that with the development of the web edition of the Guardian, his illustrations needed to fit both the square print format (see figure 4-2), and landscape web format (see figure 4-1). This meant that the composition of one illustration needed to be created in flexible layers in order to create two versions. This had an impact on the expressive use of materials; like the use of vector based illustration software which can be instantly adapted without loss of quality (Kenyon, 2012 (interview)).



Figure 3-2: Brian Stauffer, *Out of Control*, illustration for the New York Times, 18th March 2014.

Stauffer's illustration presents an explicit, playful example of the *attribute of manifestaton*, by using the ability for the text to be set in a particular shape. It is using the whiteness of the paper to create an aeroplane shape cut from the text columns, underlining the *out-of-control-ness* of the plane as it is plunging through the story text.

Another form of material signification within the context of the printed newspaper comes from the particular understanding of the handmade image in contrast to text and photography. The illustration, even in its most stylised form, signifies a human presence, something bespoke and handmade, neither automated nor mechanical. The handmade

Figure 3-3: Brian Stauffer, *Out of Control*, illustration for the New York Times, 18th March 2014.

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Figure 3-3: Brian Stauffer, *Out of Control*, illustration for the New York Times, 18th March 2014.

and constructed illustration instantly point to a presence of its maker, presenting ‘strangely unavoidable traces of the body’, a phrase Kittler used to describe the particular quality of the handwritten text (1999 p.8). This makes the editorial illustration not so much a proverbial window on the world, which is a term commonly, if problematically (Galloway, 2012 p.31) used to discuss photographs, but through the traces of the hand, a personal invitation to engage with the newspaper itself and all it represents.

3.5 Translation- Attributes of Language

Where it seems obvious in the first instance to see the illustration as a type of visual translation of written text (Pereira, 2008), I would rather present illustration and written text as two interconnected and complementary translations. Translations into both the visual language and the written articulate the story’s concept and its ideological subtext. Of further significance for the illustration, is the presence and proximity of the written text, as the positions of the two translations next to each other creates not only a potential for comparison, but a semiotic and equally multimodal relationship, (Kress and van Leeuwen; 2001, 2006; Barthes, 1977d) in print this is expressed by an image/text relationship where neither language can be fully translated into the other. The inability for the image to be fully put into words (Kress and van Leeuwen; 2006) is of strategic importance for the printed editorial illustration, for it is here that the illustration can direct or obscure particular interpretations through the idiom of visualisation, using iconography, narrative structures and mark-making.

Using my case study along with another reference from the field of practice, I explore notions of translation, before extending into concepts of semiotic image-text relationships and multimodality, which can be observed within the newspaper context.

In the *NRC* the illustration is positioned next to a written text, with a headline and sub-headline and other textual elements. The prominence of the image makes it a visual first port of call, immediately followed by the headline. But the headline and image do not instantly translate: *Exoneration is not the same as rehabilitation*¹⁰ is not literally visualised, the sub-headline reveals more clues to the content of the story, but is helped by the presence of the illustration. Image, headline and sub-headline all refer to presumed current background knowledge, namely the court case, the story of the suspect turned victim, and the discourse in the media around a failing justice system. The illustration relates to those aspects: a corroded and menacing Lady Justice, on the point of misusing her sword, a female martyr in a nurse’s uniform and the fragile scales of justice in her hand.

10. The Dutch original title *Vrijpleiten is niet hetzelfde als Rehabilitatie* is not text that allows easy visual translation or the application of a visual metaphor.

Reading this image requires an informed readership with a certain understanding of what were then current events, but also a certain cultural and visual literacy relating to the symbols of the Justice system. But even without all this prior knowledge, a notion of violent injustice is instantly present. Illustration and text work in tandem, the illustration places the story - this is about a corroded justice system-, but equally the story places the illustration - the story gives substantiated details on what is wrong with the Justice system.

Roman Jakobson described in *On Linguistic Aspects of Translation* (2000) a system of translation based on three kinds of translation¹¹, and useful in the context of illustration is his notion of ‘intersemiotic translation: an interpretation of a verbal sign by means of a non-verbal sign system’ (2000 p.233), in other words, translation between word and image. What Jakobson offers is a semiotic structure in which this can take place. Pereira (2008) in her examination of translation in an illustrated text, prioritises the written text as the primary source for the illustration. But I would argue that the written text is a prioritised translation of a non-materialized text. The illustration is equally a translation of this non-materialized text, but directs itself to both the written and the non-materialised text. Hayles (2002, 2005, 2007) explores the relationship between non-materialized *textuality* and its manifestation (particularly in the light of electronic texts, which I will examine in Chapters 5 and 6). She stresses that text can only exist in a materialized form and depending on the medium and manner we have at our disposal, text can take any form, from the spoken word through to the numerical code (McKenzie, 1999).

Walter Benjamin (1992) in *The Task of The Translator* pointed out the same principle of an unmaterialised text which he called ‘*pure language*’ (1992 p.74) which, at the moment that it is transformed into spoken or written words, has already been subjected to translation. He described the act of (linguistic) translation as finding a word that shares not only the same meaning, but shares its intention, which differs from one language to another, from culture to culture. Though this might alter the structure of the translated text, Benjamin considers this a superior translation¹² Hayles (2005) and takes this one step further; it not only matters that text is written or spoken, but *how* it is written or spoken, its mode of translation.

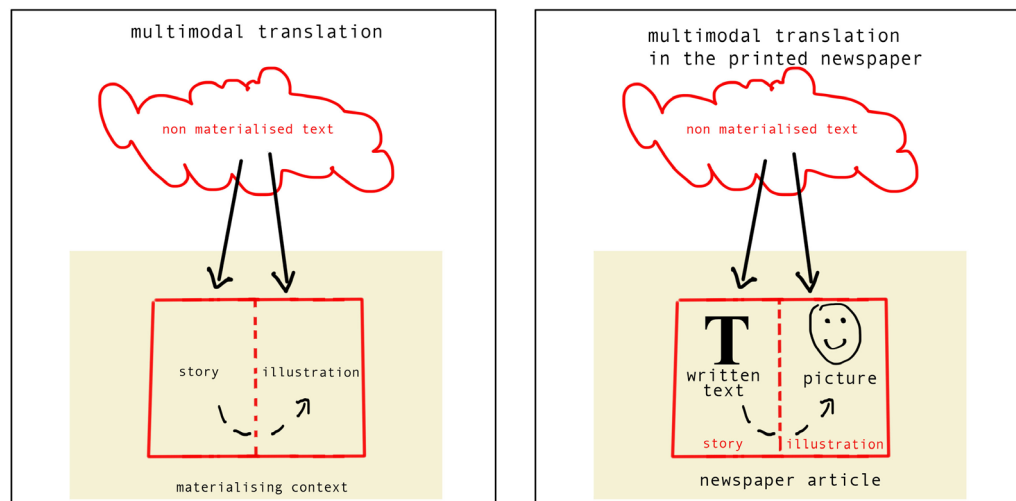
Within this thesis, to clearly differentiate the different uses of the word *text*, I further refer to this materialized manifestation of text, as the **story**,

11. *On Linguistic Aspects of Translation* (2000) system of translation types by Roman Jakobson
intralingual translation: translation between the signs of one language only.
interlingual translation: translation between two different languages.
intersemiotic translation: translation between two different media, for example, between the verbal and musical medium, between text and image, between poem and novel and so on.

which I quantify if and when needed.

In the printed newspaper non-materialised text can become a story, in written words and sentences, or a picture. The picture contains its own narrational interpretation of the non-materialised text, but in order to be an illustration, this picture is deliberately constructed to reveal the written story (see figures 3-3a and 3-3b). To re-emphasise, an illustration is a textual structure that can never appear without pointing to another related story, positioned in close proximity, and which presents a particular semiotic and multimodal relationship. In print the two modes of translation express themselves in an image-text relationship, between two kinds of language. In the following section I explore this relationship.

3.6 Image-Text Relationship



Left figure 3-3a: diagram, multi-modal translation of a non-materialised text into a story and illustration in concept, 2014.

Right figure 3-3b: diagram, multi-modal translation of a non-materialised text into a story and illustration within the printed newspaper article, 2014.

Though the story will be given prominence in the editorial hierarchy, the cognitive perception of the relationship is different; I follow Berger's oft quoted adage 'seeing comes before words' (Berger, 1972 p.7). When the page is opened it is the illustration that is first seen on the page, before the story is read. The story and illustration must reinforce one another, while the latter emphasises certain narrative elements within the story (Pereira, 2008). What plays out is a semiotic image-text relationship described by Roland Barthes (1977c,1977d) who presents image and text as two independent yet co-operative structures, one visual and one textual, 'an amplification from one to the other' (1977d p.26). The developed meaning comes from the physical closeness of the structures; image, captions, headlines, introduction, body-text, etc (1977d).

12. The translator must use the capacity of poetry to reveal the hidden realities in the text, moving from one linguistic reality to another. In this Benjamin likens a translator to a poet. (1992).

If we follow Roland Barthes' argument, the image is always an extension of the story, always dependent on and related to a verbal text. But here he sees the image as too ambiguous, too open to a variety of interpretations, a polysemous sign; 'a floating chain of signifieds' (Barthes, 1977c p.39). It is language that *locks* the image into place and within every relationship it is the linguistic understanding that creates the interpretation. If the image is seen before the written text, it gives *anchorage* (1977c p.39) to the story, or if the written text comes before the image, the image *becomes an illustration* of the written text. However Kress and van Leeuwen (2006) argue that Barthes misses one point. They write:

'...the visual component of a text is an independently organised and structured message, connected with the verbal text, but in no way dependent on it - and similarly the other way around.' (2006 p.18)

What can be shown in an image cannot be put into words. Words may describe it, but they can never be accurate enough, the image is too full with overlapping signs and structurally it is a different object. For instance, the visual deals with perspective and the special disposition of elements to achieve meaning. Words allow for a first person perspective or can give abstract ideas a definition, whereas the image will need to work with visual metaphors. Visual language has its own mode.

Kress and van Leeuwen point out that 'any text whose meanings are realised through more than one semiotic code is multimodal' (2006 p.177). This makes illustration by definition part of a multimodal system, where in order to illustrate, even within the same language, demands a change of register. In the specific image/text relationships within newspapers, the story is presented through visual and linguistic modes. In online editorial illustration this inherent multimodality can be more prominent, as I will describe in Chapter 5 and 6, where I develop this notion more extensively.

3.7 Translation, Visualisation, Editorial Illustration

Editorial illustration applies itself in a particular way, for unlike a technical or medical illustration its aim is not to visualise particular information, to instruct, or explain to avoid misunderstandings (Beatens 2003). An indicator for the different status of illustration can be noted in the absence of a dedicated caption under editorial illustration; a text that anchors the image (Barthes, 1977d), as is often the case with photographs or diagrams. Rather the illustration is offset by the same headline as the newspaper story, indicating its dialogical relationship with the entire story. It can create some notions of clarification in reference to particular story elements, but it also aims to create a visual alternative that explores the essence of the story, something that can be understood by intended readers. How the illustration



Descent into the maelstrom

David Mould, an old hand at navigating difficult copy, found himself adrift wrestling the work of a disparate international crew of novice research academics into an edited volume

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Over a 30-year academic career, I've developed a short list of things I'd rather not do, given the choice. Here are the top three, in roughly descending order of undesirability:

• Serving on any university committee charged with budget, fundraising or building projects

• Being in a meeting on any issue that I don't know where they are going to end up, or where they came from in the first place

• Participating in any event where academic faculty are required to dress up as extras in a Shakespearean drama or other works, involving an academic reading of a handwritten chapter.

When I took on just such an assignment in early 2013, it seemed like a worthwhile, intellectually stimulating project that would broaden my knowledge of current research on translation and media around the world.

Now, almost 18 months later, I find myself on a boat in the Indian Ocean, heading south of Sri Lanka, on my way to a conference in a part of the world that I've never visited before. I'm not sure why I'm here, but I'm not sure I want to go. I'm not sure I'm going to have a good time, but I'm not sure I can do anything else. I'm not sure I can do anything else. I'm not sure I can do anything else.

...and editing contributions for a volume on global journalism and new media. If I could clean up a 300-page dissertation in a couple of days, surely I could scrub down a 25-page chapter before breakfast. My calculations: period daily writing.

...and editing contributions for a volume on global journalism and new media. If I could clean up a 300-page dissertation in a couple of days, surely I could scrub down a 25-page chapter before breakfast. My calculations: period daily writing.

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Figure 3-4a (top) and 3-4b (bottom): Frazer Hudson, *Descent into the Maelstrom* illustrations for the Times Higher Education Supplement, opening spread and single image next page 19th June 2014.

These illustrations place the article within the world of writing as well as the *dangerous* world of wild water rafting. The illustration brings together, what seems like two uncompatible worlds. Figure 3-4a, emphasises the written metaphor presented in the sub-headline, but also gives a comical and reassuring note. The illustration presents the sense of heroic river based adventure - yet also places the story directly within the context of writing and scholarship, leaving it for the reader to make the bridge between the two. The illustration on the second story - figure 3-4b, foretells a sense of immanent doom, but also keeps it open whether the story will end well, or end in failure, but how it will end, will need to be read in the story.

uses this mode of translation to reach the reader is explored in the following section.

If I could clean up a 300-page dissertation in a couple of days, surely I could scrub down a 25-page chapter before breakfast!



Then there were those we rejected. Apparently one author missed not only our sessions on research methods but also the one on plagiarism!

...and editing contributions for a volume on global journalism and new media. If I could clean up a 300-page dissertation in a couple of days, surely I could scrub down a 25-page chapter before breakfast. My calculations: period daily writing.

...and editing contributions for a volume on global journalism and new media. If I could clean up a 300-page dissertation in a couple of days, surely I could scrub down a 25-page chapter before breakfast. My calculations: period daily writing.

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3.8 Reflection- Attributes of the Social

Outside the published context, the illustration is a self-contained image where meaning is confined within the narrative and forms presented (Miller, 1992), yet within the printed newspaper, due to the fixed nature of printed paper, it works as a relational object. A relationship that in other contexts, such as a news website, might be far less secure (as will be discussed in Chapter 4), or manifest itself as far more interrelated (e.g. in the case of the online illustrated work I describe in Chapter 5). This relationship presents what Kress and van Leeuwen call multiple interactive participants, ‘people (and the social institutions they represent) who communicate with each other through image’ (2006 p.114). The attribute of *Reflection* presents the ability to reflect all these participants in the editorial illustration and who can see their work in action. The illustration represents a relay of meaning through which each participant seeks to instil different values, including from the aesthetic, the signification through to whom should be addressed.

Below I discuss the relaying of meaning in relation to the position of four *interactive participants*; I discern in the processes of the production of the printed editorial illustration how they see themselves reflected and the relaying of their intent. The first group of interactive participants are the **producers** of the publication, represented by the commissioning picture editor¹³, their position is reflected in their editorial position and represented in the ideological stance towards the context, content and form of the illustration; the **authors** of the story, reflected in the representation of the story in the illustration and their inter textual-relationship; the **illustrator** represented through the designated authorship; and the **readers** who receive the illustration and are presumed to understand and appreciate this in the publication.

To illuminate this relay, I return to my case study of the *NRC* newspaper, and follow the trail from the moment of conception of a desired illustration to the final work. In this case when the picture editor selected an illustrator, she decided on a particular style and approach (Akkeren, 2012 (interview)). This means that before I had even been commissioned, the illustration had in some sense already been visualised and I, as the illustrator, had to materialise this vision, something emphasised in the directives given during the briefing. In this, the picture editor pointed to particular aspects of the content and stated a preference for a certain artistic approach within the breadth of my creative abilities. This is not to say that as the illustrator in this particular relationship I

13. Within the structure of newspapers and magazines, depending on their size and internal policies there are various positions that directly relate to reviewing, commissioning and selecting photographs and/or illustrations for publication. The exact position and title can vary per publication. The most common titles are picture editor, photo editor, art editor, art director or graphic designer. Illustrators can also work directly with editors or journalists, or can be commissioned through the mediation of an illustration agent. For the sake of clarity in this thesis in general I use the term picture editor.

merely executed the ideas of the editor; in fact van Akkeren very much appreciated and encouraged a degree of autonomy. But it started with her initiative, her briefing and was bound up with the ideology of the institution she represents. The moment I accepted the commission, I accepted these unspoken dynamics¹⁴. With her open and trust based approach, she did not require a sketch phase; she took the risk of the image failing, resulting in a possible failure of quality or signification or, if the image had to be pulled out, a layout crisis at a very late stage of production¹⁵. But for me, as the freelance illustrator, a failing¹⁶ image carries with it a number of significant risks. The reputation risk of public professional damage - in which a failing illustration is visible to all one's peers, a financial risk - as I would not get fully paid for non-published material, and a future revenue risk, through the probability of losing a prestigious client. When I accept a commission, I understand that I am representing my values (and my peer's and future clients) and the editors' values, which they see as reflecting their readers' values and are connected to an extensive chain of stakeholders, such as advertisers:

For the *NRC* I created images with a particular *persona*¹⁷ of the ultimate *NRC* reader in mind, based on the same notion as presented via their marketing page (*NRC media*, 2013), but also a more personal reference, namely my own mother, then an avid *NRC* reader: culturally literate, educated, but of a certain age. This sets an internal benchmark to which I would refer in aesthetics and iconographic coding. I was never given any feedback on whether this commissioned illustration image was received successfully¹⁸ by the editor, publishers or their readers, nor did I request this, which was not unusual in my relationship with the *NRC*. The evidence of appreciation came with a new commission (and a phone call from my mother).

3.9 The Relay of Intent, within the Ideology of the Publisher

Stuart Hall's model of *decoding and encoding* (1993) within a television production can be a useful model of understanding the shaping of the meaning of an illustration within the framework of printed editorial news-

14. The business relationship is kept very informal, with no exchange of written contracts. The *Dutch Design Association* (bno.nl) advocates certain contract procedures for illustration, but these often are not applied in these particular one-off commissions.

15. Just like the director of a film production trusts his choice of production team: camera operator, sound operator or props designer and so on, so does the designer use the same notions of craftsmanship. The creativity of the various visual disciplines (illustration, graphics, photography) give the newspaper its extended value. (Akkeren (2014)(interview))

16. 'failing' is of course a subjective term, based on whether the work has currency in terms of aesthetic appeal and signifying powers.

17. Personas are fictional characters, based on actual data, that depict target user populations (Pruitt, 2003 p.313)

18. At the *NRC*, there are no systems in place to measure the succes of illustration, other than the occasional individual reader's response.

production. Publishing, like television (in the early 1980's, the time of Hall's writing), is a *one-to-many* distribution network. Within this system the illustration works like a multimodal object, where concepts are materialised through many incarnations and many participating structures, structures that are combinations of the social and the technological. Hall presents the meaning held within communication products as altering and changing within every stage of its production and consumption, until it is finally decoded by a reader (in the case of the newspaper) who may *read* it in three 'hypothetical positions' (1993 p.515): **dominant-hegemonic position**: as intended to be read, by the intended broad audience, the so called the *preferred code*; **negotiated position** as *believed* to be intended (a belief shaped by the readers own background) or **oppositional position**: read *sceptically* and the reader opposes the intentions¹⁹. The *preferred code* in this case, I argue, should not be defined by the broad mass audience of a televised production, but by the target readership of the newspaper: 'implied readers' (Kress and van Leeuwen, 2001, p.115) imagined by the publisher, but extensively analysed through market research, for instance for the *Guardian* (Guardian, 2013) or the *NRC* (NRC media, 2013).

This relay of decoding and encoding is one of continuous communication and follows the rules of discourse and language (Hall,1993). It is not the illustration in some materialised form that is passed on, but a symbolic construction (Corner, 1983), the intent that is to be expressed through the illustration. From conception in the first editorial meeting to the final printed image, with the creation of the image somewhere en-route, the initial intent is coded, decoded and shaped through the material, institutional and social vectors through which it is propelled²⁰.

When it finally materialises as part of a printed edition, the editor can but hope that the reader aligns with *this* intended preferred reading (1993 p.513).

But in this printed context, unlike present *online* news media practice (Chapter 5 p.101) the response of the reader is not directly visible. Indirectly however, the interactive process of response outside the publication is reflected in the popularity of the illustration, through the development of

19. Hall (1993 pp.515-517) presented a model of three ways of decoding, reception by the viewer of the (television) message:

The dominant-hegemonic position: where the message is constructed to be understood by the majority of viewers-preferred code (1993 p.514) and is received by the viewer as intended.

Negotiated position: where the viewer acknowledges this construction, but decodes it from their own perspective, through their own technologies and cultures, they might understand a different message.

Oppositional position: where the viewer acknowledges the preferred code but detotalizes this message and decides to rephrase it in a political oppositional way within their own frame of reference.

20. Kress and van Leeuwen point out that visual language has a different signifying construct from textual language. (Kress and van Leeuwen 2006) Relay of meaning becomes then more ambiguous and presents a larger risk of misinterpretation in the relay of coding and decoding. This risk is something very real within the practice of editorial illustration, where in the speedy and fragmented chain of production (picture editor, illustrator and lay out artist might not be in the same room or working at the same time) something might be misrepresented at various determinate moments (1993 p.509). Through developing working relationships, and guarantors such as portfolio or work noticed in prestigious publications, thus showing expertise or through representing agents, there is a constant attempt to minimize this potential for misinterpretation.

the culture and style that is associated with the illustration, and ideology of the publication that feeds into the production values and thus the creation of the next images (Kress and van Leeuwen, 2006). Simon Ings, editor of *ARC* magazine, a high-end magazine with a multitude of illustrations, explains how the informational structures around the magazines not only depend on the final article itself, but are being developed with their readers through a *blog* structure, published in print, and continued through discussions and recommendations on social media (Simon Ings, 2013 (interview)). In current print media contexts, social media and online presence are increasingly part of the continuation of the newspaper article, where social media is being used as a tool for direct communication between all interactive participants.

3.10 Reflecting the Story

As Hall (1973) argued, in the modern newspaper the story is the essential element, the photograph an optional one. Yet photographs, when they appear, add new dimensions of meaning to a text. Barthes observed that pictures are more imperative than writing, they impose meaning at one stroke, without analysing or diluting it (Barthes, 1977c, 1977d). As I explored in the previous section, editorial illustration translates the same essence as the written story but does not visualise what's written. However it does need to invite a reading of the story. The editorial illustration needs to evoke, in a single image, the *gist* of the story. Even if the structural obstacles were surmountable, it would not be permitted for the illustration to visualise the full content; the illustration should do no more than hint, otherwise why read the story?

But whilst the illustration is a stimulating, but necessarily incomplete, synopsis at the moment of encounter, it remains present all the time during reading. This is where it can be used to evoke deeper, perhaps hidden, levels of engagement and reflection. The process of reading the story can now inform the illustration and, in turn, can sustain a subtle and continuous nuancing of the reader's reception and understanding of the story. This emergent relationship, offering a deepening of understanding, only becomes clear, if at all, during and after reading.

3.11 Reflecting the Illustrator

However controversial the editorial illustration might seem, it can never transgress the boundaries of editorial ideology²¹ and must align itself with the values of the story. This might and can sometimes run counter to the

21. The ideology of the newspaper might be one presenting a liberal openness aiming to represent a diversity of opinions, this then demands the illustration to carry some controversy towards the ideology. But the illustration cannot deny or counter the written content.

authored expressiveness which the contribution the illustration suggests. Editorial illustration can be highly directed to a point where it is a mere stylistic treatment of an editor's idea, as Milton Glaser, a celebrated art director, admits in his work for *New York* (Kraus 2009 p.147). Or, as Andrej Dudzinski, an immigrant from Poland to the US in 1977, and renowned illustrator and contributor to the New York Times Op-Ed page, pointed out:

'I traded one form of oppression for another. In Poland there was censorship, but to survive you learned by subtlety. In the States, I've had problems with anti-obscenity guards. It's mostly commerce that oppresses.' (Kraus, 2009 p.147)

But it would be too cynical to presume that all illustrators do is dress up someone else's idea. As the example of early halftone printing from 1910 by Joseph Pennell shows (see figure 2-4) there is a long tradition of appreciation of the illustrator as an independent contributor, known from political cartoons and the Op-Ed²² illustration. But the freedom to present such personal interpretations flourishes through individual relationships, developed between illustrator, art director and the culture within a publication (Kraus, 2009; Losowsky, 2009; Brazell and Davies, 2011, Gove, 2012).

As I found in my practice and through the conversations with editorial illustrators in the industry (Matt Kenyon, 2012; Max Kisman, 2012; Han Hoogerbrugge, 2012; Nicola Jennings, 2012 (all interview)) in many cases illustrators are given space to express their ideas, albeit within the boundaries of the publication's material constraints and in terms of what the publication represents.

3.12 Reflecting the Reader

If the reader is to understand and interpret the illustration, if he or she has any chance to *get the preferred reading* (Hall, 1993)²³, it needs to be in a visual language that he or she can *decode*. But this language is not fixed or described, it is an ever-changing index of signs, where attached meanings are fluid and depend on personal, social and cultural systems (Kress and van Leeuwen, 2006; Barthes, 1977a, 1977b). Few if any readers will grasp the exact

22. A influential format within editorial illustration culture is the New York Times distinct Op-Ed (opposite the editorial) illustration (1972- ongoing) as Kraus states: 'As national and international newspapers began to adopt the Times Op-Ed formula, they emulated its distinctive aesthetic as well. The influence of this new visual idiom, moreover stretched beyond daily journalism to fuel a renaissance in American illustration. Mainstream publications began to hire Times artists to do conceptual pieces and illustrators everywhere tried their hand at idea-based imagery.... Op-Ed art became a way of thinking and drawing that altered communication'. (Kraus, 2009 p.56)

23. Hall (1993) presented a hypothesis of three kinds of reception of a communication product: a dominant or preferred reading: the message understood as intended by the sender; negotiated: where the reader only shares part of the intended reading, but can resist or modify others because of their personal conditions; and oppositional: where the reader relates to the reading in a fully oppositional way.



Figure 3-5: Chris Draper, *Der Dritte Weltkrieg*, illustration licensed from original commission for the *Independent on Sunday* for magazine for TAGS, *Der Dritte Weltkrieg*, November 1998. The original article and illustration were commissioned for the *Independent on Sunday*.

This illustration for the article *Der Dritte Weltkrieg* (the *Third World War*) illustrates the notion of cyber war, the war of the future. At the time of its publication, the collage elements were all photographs of the most current computer technology and representing computer culture as it was understood at the time of publication 1998. In the use of these elements, it is presumed that the reader knows these objects, or at least knows how to place these. At present these computer elements are dated, yet recognisable, over time these references to a particular physical appearance of computer technology can possibly be no longer read. Other elements like the gun silhouette and the masked terrorist seem less time-bound.

associations of all of the personal, semiotic and historical references, but nevertheless, a successful illustration is able to tell its story to the widest readership through a shared *common* language, whilst at the same time giving a sense of exclusivity to the more informed readers, based on Hall’s model of decoding positions (Hall, 1993). But the signs created for the *more informed* reader do not necessarily exclude the non-initiated. These signs can function as signposts towards the existence of an aspiring exclusivity within the wider readership, to do with levels of cultural literacy, intellect, hipness or the presence of particular cultural groups. I point to Hebdige and his discussion of the representation of working class subcultures in the media (1993). He argues when particular social groups are depicted in the media, whether this be in photographs, through style tropes or iconography within illustration, these representations are studied not only by the *non-initiated* wider readership but also by the members of group themselves. In turn the publication itself represents a particular value within this particular social group, which influences their response to these depictions (Hebdige, 1993).

Though social groups can sometimes be portrayed with negative connotations, the editorial illustration should never intentionally reflect negatively (though maybe in jest, within the boundaries of the publication’s

values) if this group is also perceived as an intended readership; codes for this exclusive group can then be read as a positive act of inclusion, of reflection and signposting.

To come back to the case study, I presumed the NRC readership (NRC media, 2013) to be able to understand the symbols of Lady Justice; I inserted more exclusive signs, for instance, I was very careful to make sure that the nurse wore a particular type of shoe, that at that time were commonly worn in hospitals. With this I signalled to the medical professionals (a readership of the NRC) that this image contained exclusive knowledge of hospital life, reflecting their knowledge, yet I'm also aware that this detail is not necessarily common knowledge, but inclusion of this detail added a layer of initiation, of credibility.

If the illustration is successful there is not only the transmission of meaning but also the creation of a sense of belonging, the illustration's mediation of meaning connects the reader and sender. News publishing is a commercial undertaking with a certain readership in mind, which is constantly reviewed and monitored. For instance, based on market research, the *Guardian* presents its readers as: 'Hard to reach, affluent, well travelled, arts and culture lovers, progressive and food and drink aficionados.' (Guardian, 2013) But in this case, between the newspaper and its reader, between the published and received image, the social relationship is 'represented rather than enacted' (2006 pp.115-116). the newspaper is read without the publisher present. Whether each editorial illustration actually reflects *the reader*, who ever that might be remains forever speculative. But the models proposed by Hall (1993) and Kress and van Leeuwen (2006) are useful in understanding how the reader's position is not only essential and receptive but also dialogical.

3.12 Engagement - Attributes of the Ideological

The editorial illustration's role is to engage the readers, seduce them not just to look, but to read, to read the image, the story and to read the ideological subtext (Hall, 1973). This seduction of the reader is in the first instance embodied in the image itself, but unlike self-contained images, its task is to present itself as an ideal reading of the underlying ideological message which it shares with the aligned text, both situated in the same ideological context. The quality of engagement is that of the imagined ideal interpretation, using the image to establish a bridge between the reader's reality and the ideological message and to persuade them to accept.

To return to the case study, my aim was to create an image with an immediate visual impact that would arrest the reader, yet with enough visual sustenance and deliberately *unresolved* questions to both intrigue

and invite a particular reading of the story. To do so, all the visual elements were there to support a particular reading of its visual grammar (Kress and van Leeuwen, 2006); the contrast to create a *visual shock* between the imposing dark presence of the corroded cypher, ready to strike, and the background, the composition (vertical with a central axis), the lines of vision (low angle and eye level), the relationship with the reader (the blindfolded gaze) the dynamics (the raised sword), multimodal (diagrammatic signifying the analytical and clinical but rough stencilling signifying notions of protest). What would sustain the engagement was, on the one hand, the recognition of the symbolic visual language (Lady Justice, the female martyr) but also the deliberate play and manipulation of the symbols and visual metaphors to appeal to the reader's presumed cultural knowledge and visual literacy. On the level of impact the message was already clear, it was the process of deciphering this play, the reflection, that deepens signification.

Where the headline was couched in juridical terminology and semi-neutrality, and the story in analytical language, in contrast the illustration brought a subjective opinion. Endorsed by the newspaper, I was positioned as the exemplary *ideal* fellow reader whose comment was there to inspire.

Central in understanding the quality of engagement is the use of the term *ideological*. When it comes to editorial illustration, this term touches on the Lacanian notion of the *ideal*, a complex psychoanalytical concept that has influenced multiple definitions within media, perceptions, and theories of representation, but also as the *ideological* within the institutional and socio-political realms. What follows is an explanation of how this term can be used and understood within the context of editorial illustration. It explains how it works on the levels of the personal, the representational and the socio-political and how it can be helpful in understanding how illustration supports the process of engagement.

I present *ideology* as a belief in an internalised version of an imagined self-image, the Imaginary²⁴ to which we constantly refer and relate through a symbolic identification, the Symbolic²⁵, where both are present in an unobservable Real²⁶. The Imaginary, our fantasies and perception, is offset by the Symbolic, the *non-natural universe* (Johnston, 2014) presented through the culture we inhabit, and the values we relate to. These are what determine our actions and build our ideas, judgements and (visual) language. Our ideology, this commitment to the Symbolic, is continually filtered, confirmed and updated through the media channels in which we are immersed. They start with conversations with our family and chosen community, and expand to include all the selected mass media channels

24. ideal ego or the Imaginary, what Lacan calls the small other (Žižek, 1997-2007)

25. (the Ego-Ideal, the Symbolic, Lacan called the big Other (Žižek, 1997-2007))

26. (the superego; the cruel and insatiable agency which bombards me with impossible demands (Zizek, 1997-2007)).

including our newspapers. They give an unconscious index of references, ever present in our encoding and decoding of what we sense and create, including images.

It is these Symbolic references, offset by the Imaginary image, that illustration hooks into so that the reader can not only *read* but recognise them as valid. This validation is essential, because otherwise the illustration has no ability to convince. Unlike a photograph, which can evidence through the indexical, illustration can only be believable through representing this Imaginary-Symbolic reflection of the self.

Where the illustration is in itself an ideological representation, commissioned, created and read as such, this signification is further fixed by the ideological context in which the illustration is set. Stuart Hall²⁷ in *The determinations of news photographs*, observes the use and ideological position of the news photograph in the context of a particular newspaper ideologies (Hall, 1973)²⁸ where he shows how their news value, as indexical representations of events, is encapsulated by the newspaper's ideological treatment; 'the inner discourse of the newspaper to the ideological universe of the society.' (1973 p.234) Written in 1973 and referring to newspaper culture at that time, it presents issues of ideological contextualisation and signification that are still part of present newspaper practices.

Making the photograph, 'appear as 'the operator' for the reproduction of ideology... articulating core themes of bourgeois society in terms of intelligible representation.' (Hall, 1973 p. 232)

Where the ideology is *put upon* the photographic image, the same ideological treatment happens when the illustration enters this realm. However, the illustration is not so much a continuation of ideology (through the recording of a new event added to the realm of paper), but a confirmation of ideology through interactive participants.

What influences the quality of the editorial illustration in turn are the (unspoken) guidelines that are developed in response. Editorial illustration must engage with the reader's mind-set, but the methodology is constantly changing through the changing cultural setting and the attempts of the newspaper to respond through its visualisation. This is something observed by many illustrators represented Kraus's history of the op-add illustration, and the particular freedoms of the position of the Op Ad illustrator, which has been changing from highly personal and political to carefully constrained depending on the political and cultural climate that was reflected in the *New York Times* (1970- present) (Kraus, 2009).

27. Hall's notions of ideology was based on the Gramscian notion of hegemony 'the process of establishing dominance within a culture, not by brute force but by voluntary consent' (Procter, 2004, p.32) where ideology would be operating more within socio-political frameworks related to the force of prevailing ideas. For Hall, culture was not something to simply appreciate or study, but a 'critical site of social action and intervention, where power relations are both established and potentially unsettled.' (Procter, 2004 p.1)

28. Hall described the function of the newspaper as the profitable exchange of news values, harnessed to the latent function of reproducing 'in the dominance' the major ideological themes of society (Hall, 1973).



Figure 3-6: Gillian Blease, *Straight but Narrow*, illustration for *The Economist*, 2012.

Straight but narrow, deals with homosexuality, the persecution and the hypocrisy in Islamic countries, a subject matter that in many ways is delicate and touches on cultural and visual taboos. The ability to read the image's code is central, for instance the rainbow is a symbol for homosexuality, the crescent moon, a symbol for Islam. Blease uses the rainbow colours in multiple ways: visually its brightness, grabs the reader's attention; as a code it signifies a positive attitude to homosexuality; and as streaming lines through the Islamic buildings, the movement presents an desire for positive intervention, underlining the notions of hope that are present in the article.

3.13 The Incompleteness of Editorial Illustration

The editorial illustration is both an independent visual construct as well as a partner within the signifying but fluid relationships of ideological story, visual structure and imagined and actual readers. Here in the printed context, editorial illustration differentiates itself from other forms of visualization, such as news photography, data visualisations and typography. The illustration is positioned with particular stories that seek to give meaning to current events. They place analysis and opinion above the stories substantiating facts.

This kind of news story is incomplete by nature, not only because of the material restrictions but also because the written language, its syntax and semantics and cultural taboos, force it to be limited. There is always part of the story left untold and the reader has to fill in the gaps with their own knowledge.

Where a photograph aims to validate the veracity of the story - and paper over the gaps - through the presentation of a layer of visual evidence, showing real events, real people and objects, illustration can do no such thing. As a constructed image it will always be a visual interpretation, a visual translation not of the written text itself but of the essence of the text - a translation into visual language. But where linguistics fail in the complete description of the image, so the meaning of the illustration cannot be fully shared, and will always remain ambiguous. I call these the conditions of incompleteness and I would like to propose that these are essential for editorial illustration to flourish.

Through the multimodal relationship with concept and story, where the illustration is both its own story and a relational one, through the particular use of the reader's own codes and the setting of the ideological context, the illustration suggests interpretation. But this interpretation ultimately is of the readers' own making. Within these conditions of incompleteness, illustration is a tool of reflection, and here I present the key quality that allows deliberation, which I call: the attribute of incompleteness. Something's deliberately left unanswered, other than through the vagueness of the notion of belief, and trust in an ideology (Žižek, 1997)²⁹. Something present in the condition of the printed form and that has shaped the tradition of the editorial illustration.

This key finding came to the fore through the discovery of the constellation of attributes and the application of this model to printed editorial illustration, but my hypothesis is that the key quality of incompleteness is central to all forms of editorial illustration. What is important to understand is that this constellation is relational, and the weight of individual attributes and relations between them can change, but together they allow for the key quality of incompleteness. How and whether the illustration can successfully present this attribute, depends on how the affordances of the platform are structured by design in the proximity of the editorial illustration.

In the following three chapters, I will explore this hypothesis, through present news websites in Chapter 4, where I claim that the design of the present news website prevents the illustration from fully functioning, and in Chapter 5 - where I investigate the wider online network and explore particular illustrated forms that appear to function successfully. The research practice presented in Chapter 6 underlines certain considerations and the presence of the key quality, through the exploration of one particular digitally native illustration method.

29. Žižek deliberates this notion of incompleteness in relation to the Internet and the accelerated access and growth of information available that has been important drivers in Western communication culture over the past twenty years. He pleads for the importance of a mental space left open, not filled with (virtual) experiences and information, but something that is deliberately left unanswered, except through some vague personal notion of the ideological interpretation; he makes a plea for the importance of incompleteness. (Žižek, 1997)

4 Editorial Illustration in a News Media Web Page

In this Chapter I describe the current standing of editorial illustration in news websites. In many ways the news website presents itself as the logical online extension of the printed newspaper and over the past few years has become the driver of news publishing (Ofcom, 2014; Pew Research Centre, 2012, 2014). The structure of this news medium is geared to give access to as many information sources as possible and, for instance, the *Guardian* newspaper has a guiding principle of *mobile first* (Deloumeau-Prigent, 2013), where the content of the website is presented in a flexible format that automatically adapts to the presentational abilities of all different mobile devices. This precept forces particular design principles on the structuring of the content. This ideology of information access and the design structure are both problematic for editorial illustration, where it hinders the attributes of translation and engagement's capacity to function, and thus ultimately disables the key quality of incompleteness which enables reader deliberation.

I explore this particular position of the editorial illustration through a case study of an editorial illustration on the *Guardian* news website, where I discuss the particular design structure and developed interactive position of the reader. This allows me to analyse the particular dysfunctionality of editorial illustration within this environment. Moreover the case study emphasises the fact that it is not the mediality, the overarching material qualities and conditions of the online environment, that leads to the failure described above, but rather the application and local design structures that are in place.

The case study is introduced by presenting the notion of intermediation (Hayles, 2005, 2007), an understanding of media transformation, which I apply to print-based media structures, giving a brief overview of present and developing news media formats.

4.1 The Transformation from Old Media to New Media

Marshall McLuhan stated that each medium is the content of another (McLuhan, 2001), and with each development the impact goes beyond technical innovation, it causes a change of scale or pace which in itself extends the possibilities and impact on an entire media network. This tone of progressive forward movement is also found in Bolter and Grusin's idea of remediation:

'Remediation in media is the representation, absorbing or repurposing of pre-existing media into newer forms and in doing so influence pre-existing media formats.' (2000 p.19)

This quality of remediation is attributed in particular to digital structures (2000). But whether or not remediation also entails the loss of certain media and certain media qualities or even developments that revisit (pre-digital) media forms, is not taken into account in these definitions. In contrast Hayles presents the notion of remediation as a far more *messy* and nonlinear process, which she calls intermediation:

‘Complex feedback loops connect humans and machines, old technologies and new, language and code, analogue processes and digital fragmentation.’ (Hayles 2005 p.31)

In this process of intermediation she includes interactions between systems of representation, modes of representation, and manifestations in both analogue and digital form, but resists the concept of the computer as the ultimate ‘solvent that is dissolving all other media into itself.’ (2007 p.31) She emphasises the fact that the transformation into digital media is only in its early stages and that communication is still heavily reliant on notions of textuality derived from print. These structures are not easily done away with, nor would discarding them be sensible, as they are fundamental to our overall structures of communication and thinking (Hayles, 2007).

Galloway is also critical of McLuhan’s and Bolter and Grusin’s notion, arguing that what is presented through the computer is not a remediation of a particular materiality or its ontological language, but already deeply embedded in computational practices that reflect *old media* tropes only in appearance (Galloway, 2012 p.20).

These notions of transformation point to the process of change that is the result of human design, in response to developing capabilities within computing. The manner of this response is based on ideological agendas around technology and communication, which can leave existing media practices and qualities overlooked or disregarded at particular moments¹ (Pold, 2005; Chun, 2005; Hayles, 2005). This might have a serious impact on established media forms, such as editorial illustration, where particular digital capabilities, such as multi platform presentation or access to information, are prioritised, and the form of dissemination itself is not understood as essential. I explore these aspects further through the case study in this chapter.

Although online platforms, structures and content are a recognizable continuation, they are of a very different nature than any form of visual

1. A well known case of the disruption of a particular media technology was the decision of the dominant producer of mobile platforms, Apple, to abort their support of a popular imaging software *Flash* (Adobe, n.d.) This decision was so contentious that Steve Jobs the CEO of Apple felt the need to defend this decision in writing: ‘Flash was created during the PC era – for PCs and mice. It is a successful business for Adobe, and we can understand why they want to push it beyond PCs. But the mobile era is about low power devices, touch interfaces and open web standards – all areas where Flash falls short.’ (Jobs, 2010)

communication we have encountered before, yet they nevertheless remain a product of a long tradition of print reading, in both the way content is structured and the way we read it (Deegan and Sutherland, 2009).

The process of intermediation does not guarantee a continuation of all the existing constituents of earlier media, but offers a way of understanding the survival of its essential qualities, in other forms and other locations, as long as the roles performed by these earlier media are still required.

4.2 The Structure of Present Online News Websites

In the following short overview I briefly present the development of the online news media culture, which contextualises the way editorial illustration currently functions on the news media websites.

The newspaper industry is going through a historic shift, where the traditional ways of publishing, built around the printed edition, no longer drive the medium and are no longer viable (The Economist 2012; Mitchell, 2014; YouGov and the Guardian, 2013). For the industry they still function as a reference model, an invaluable infrastructure and knowledge base for news gathering and publishing, although they are also a dragging anchor to innovation (Deegan and Sutherland, 2009). Yet news structures are changing rapidly, and digitally native ways of working are being explored (Siapera and Veglis, 2012; Fredin, 1997, Fenton, 2009; Stuart, 2006). What distinguishes online news publishing is the level of automation, the amplification of speed, space and connectivity (Fenton, 2011), which means accessing twenty four hour news updates, instant access to archived materials, extended reader participation and different and expanded textual experiences and processes, including multimedia and computation technologies (Marshall, 2013; Curtis, 2013; Santos, 2013(all interview)).

In terms of production, this allows for very different ways of researching developing and disseminating news stories (Fenton, 2010; Deegan and Sutherland, 2009; Stuart, 2006; Hirst, 2011). It forces journalists to both compete and work with their reading audience, allowing for new forms of investigative journalism such as data journalism (Rogers, 2013) and presents an increased awareness of the unavoidability of subjectivity (Fenton, 2011). It also changes the role of the receiver who in the 'many to many' model is also sender and producer (Fenton, 2011; Dean, 2010; Gerbaudo, 2012, Shirky, 2009). In terms of dissemination and presentation the multimodality has expanded not only in the sense of multimedia and interaction, but has also expanded (through networked and computational technologies) into many new formats (Marshall, 2013, Curtis, 2013, Bates 2013, Sturt, 2012; Nieuwenhuizen, 2012 (all interview)), such as interactive multimedia storytelling (Hamid and Holmes, 2013), information graphics and data visualisation (Rogers, 2011), (Curtis, 2013; Santos,2013; Sturt, 2014(all

interview)), news games (Bogost et al., 2010), and hybrid online and print publishing (Ings, 2013 (interview)).

Access is possible for a growing proportion of the population² (Office of National Statistics, 2013). This suggests that audiences are also finding new or different methods of constructing their personal information and news systems. These may include mobile digital devices presenting social media, websites, information browsers, apps (tablet and mobile) but also broadcast television and radio (which are equally changing in structure through digitisation) and print media including the newspaper (YouGov and the Guardian, 2013). These methods of production and dissemination, along with increased opportunities for interaction, are in search of new relationships. These methods can incorporate values that were once tied exclusively to print, such as tablet-editions that are deliberately finite and limited, rather than continuous (Hume, 2012; Bates, 2012 (all interview)); Introducing the *Guardian* iPad edition- (Guardian T, 2011), whilst also seeking financial viability through paywall systems (Hirst, 2011; Arthur, 2012). Furthermore they can seek to extend the innate possibilities of the online and digital through expanding existing media apps towards a more serious audience like BuzzFeed³ and Mashable⁴ (Mitchell, 2014). However at present many of the mainstream news websites such as the *Guardian* (theguardian.com), the *Times UK* (thetimes.co.uk), the *New York Times* (nytimes.com), the *NRC* (nrc.nl) or digitally born Huffington Post (huffingtonpost.co.uk), operate through the constraints of a content management system. Which is a system I discuss in the following case study.

4.3 Case: the Illustration of the Fracking Debate on the *Guardian* News Web Page

In this case study, I analyse the position of the editorial illustration within a web context and the technologies used that shaped this particular image text relationship and its aesthetic experience.

The illustration together with this particular article appeared in the *Guardian* on the 18th of April 2012, online as well as in print (see figure 4-1 and 4-2). The illustration is by Matt Kenyon accompanying a story by Zoe Williams. The written content is the same, the illustration is largely the same though it is adapted in composition to fit the different dimensions. The title is: *On fracking and wind we are having the wrong arguments,*

2. 'Almost three quarters of adults in Great Britain used the Internet everyday (73%) in 2013, with 6 out of every 10 adults (61%) using a mobile phone or portable computer to access the Internet 'on the go', and 55% of people, more than ever before used the Internet for reading newspapers or magazines.' (Office of National Statistics, 2013)

3. buzzfeed.com

4. mashable.com

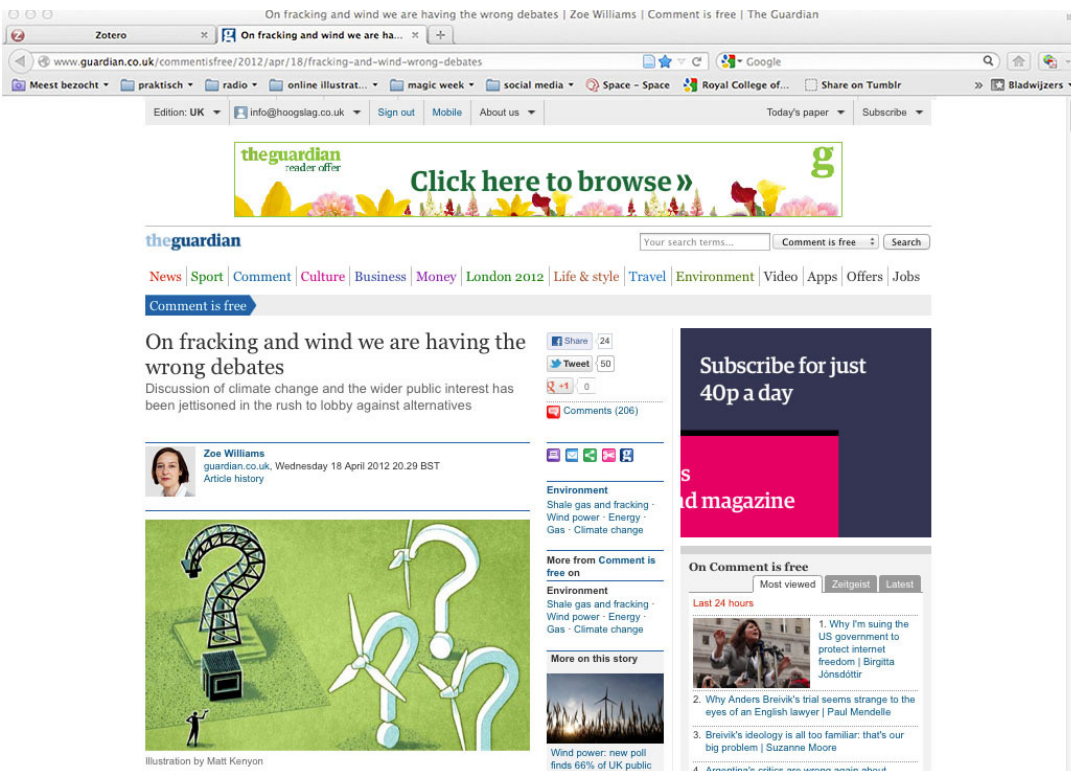


Figure 4-1: Matt Kenyon, *On fracking and wind we are having the wrong arguments*, illustration Guardian web page, 18th April 2012.

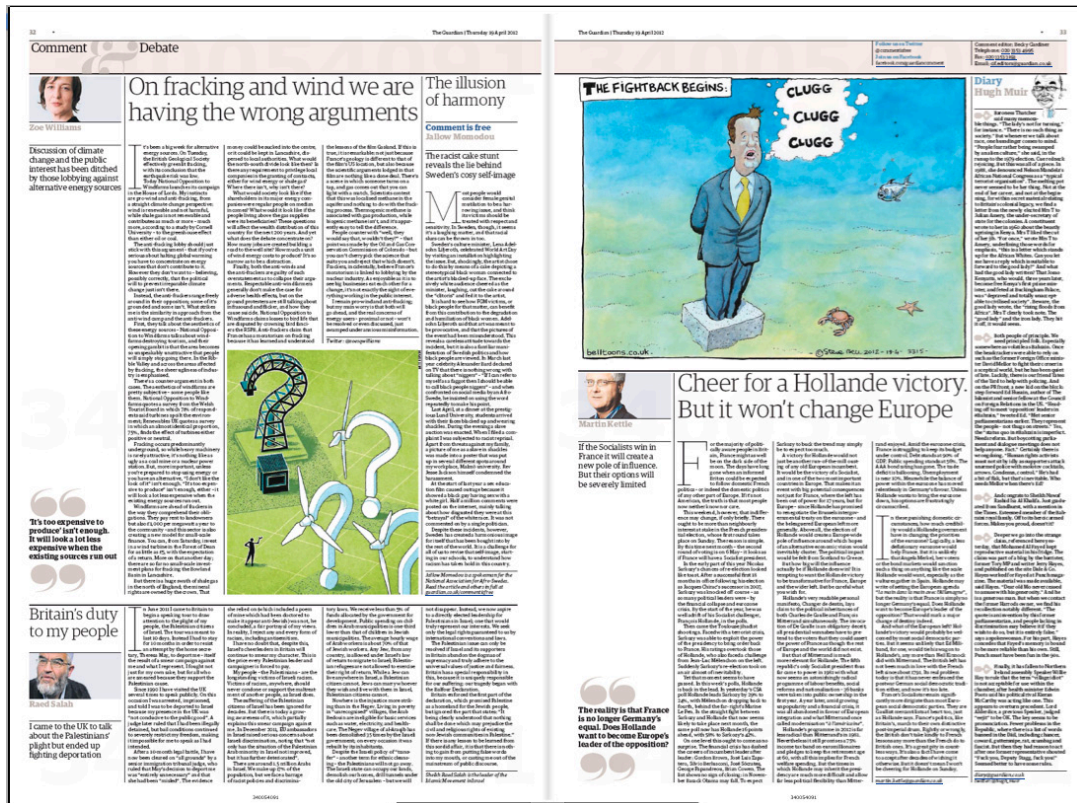


Figure 4-2: Matt Kenyon, *On fracking and wind we are having the wrong arguments*, illustration (left) Guardian spread printed newspaper, 18th April 2012.

The print edition has the same article content, authors and illustration. Note that the illustration in print differs from the web edition in its dimensions, position and the mosaic context of other stories and images.

and is an analysis of the discussions around *fracking* - extracting gas from deep underground through controlled explosions, versus *wind-farming* - large swathes of windmills dotted around the countryside and seas.

The study consists of various visits to the website between 2012 and 2014, starting with its first release date. The viewing was on a laptop (Apple MacBook, 13 inch screen, system 10.7.5, browser: Firefox with all default settings), which also presented particular navigation bars of the system and the browser. Every new visit, or viewing on any different device, yielded different aesthetic and informational experiences.

There is no set way to navigate or view this story and its illustration. The *Guardian* homepage on the day itself presents a link but the article can also be reached through browsing the categorising link on the *Guardian* homepage, through a directed search, through a hyperlink in an online text, a link sent via e-mail, through social media or rss⁵.

When selected the browser window displays a page that is dedicated to this one article (see figure 4-3), and this is reflected in the URL of the page - its web-address. This *opening window* presents the article embedded in a range of information: hyperlinked advertisements, access to a search engine (Google), the logo of the *Guardian*, the navigation bar of the website, links to social media tools and links to associated content. These surround a dedicated single column for the story, which opens with its headline, sub-headline, the portrait and name of the author, the original publishing date and the top fragment of an image.

What is most notable is the diversity and quantity of potential information on offer. In this particular window, there are more than sixty visible links to information elsewhere (see figure 4-4). The links all lead to other locations, some within the same page, but many link to different web environments either within *the Guardian* or elsewhere.

Continuing down the page, the amount of visible page elements can fluctuate with every visit. But in all cases it follows the format where the top five to seven horizontal rows of information are menu bars and advertising, with three vertical columns, displaying selection options, advertising and the dedicated story column.

To read the article, the reader needs to scroll down to reveal the unread story, but there is no indicator of the story's length. Where the story at first is surrounded by other textual elements, scrolling down gradually moves these out of sight, leaving only the story in one long column. At the end of the news story, the reader encounters the reader comment section, where individual commentaries are posted in chronological order. Comments either address the article or respond to

5. RSS feeds (*Really Simple Syndication*) are news feeds based on a selection of themes by the user. They feature as clickable link within the webpage or web application and show when particular websites have added new content, most commonly by showing the headlines.

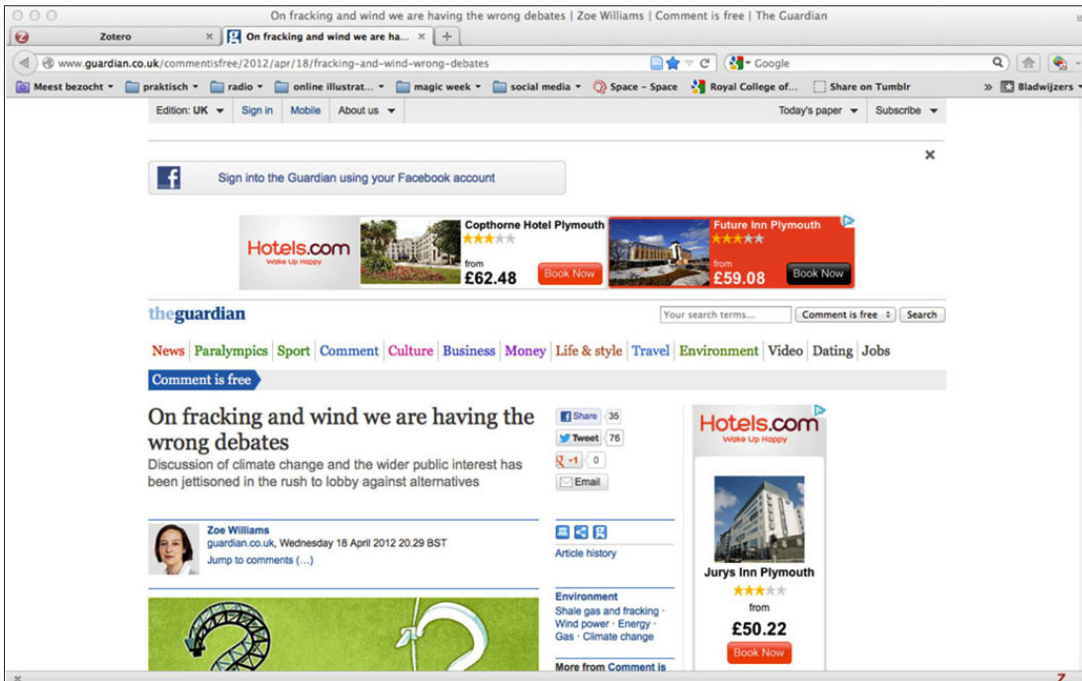


Figure 4-3: Matt Kenyon, *On fracking and wind we are having the wrong arguments*, illustration *Guardian* web page, in part, 18th April 2012.

This screenshot shows the opening window of the article on my laptop, where the illustration is only partly visible. On some occasions, when I revisited the page, the image wasn't visible at all, due to the height of the advertisement.

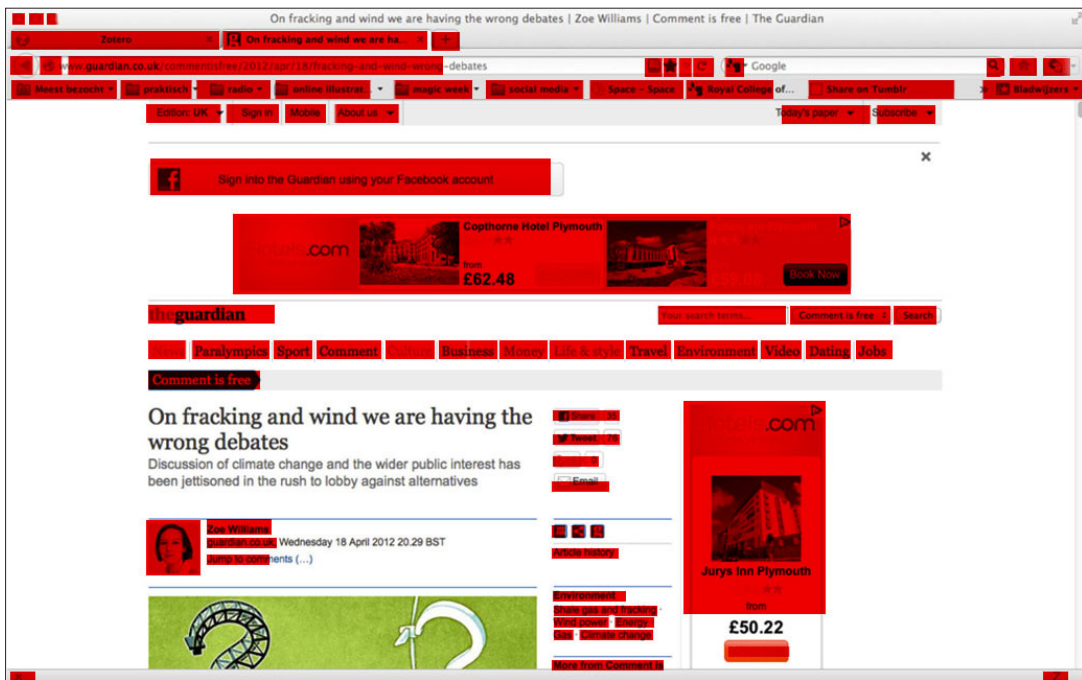


Figure 4-4: Matt Kenyon, *On fracking and wind we are having the wrong arguments*, illustration *Guardian* web page, hyperlinks in red, 18th April 2012.

This screenshot shows the opening window of the article on my laptop, where the illustration is only partly visible. On some occasions, when I revisited the page, the image wasn't visible at all, due to the height of the advertisement.

each other. Above the article there is a numerical indicator of the amount of reader's comments.

Reading and scrolling are not always continuous actions. The experience of a web article invites a fragmented reading, with various forms of interaction, like stopping, skipping, glancing, reversing and, through clicking hyperlinks, moving to other texts elsewhere on or outside the website.

4.4 Responsive media (CMS systems); Multi-Platforms and the Problem with Formatting of Visual Content

The *Guardian* news media website is based on the principles of *Mobile First* and *responsive* web design⁶ (Deloumeau-Prigent, 2013). Andy Hume, one of the architects working on the *Guardian* web architecture, describes this design principle:

'It ties into this idea of there being one web, one article, one story that has one URL⁷ on the web. When you go there to get that story, it comes back to your device and presents itself in the most appropriate way for that device. What drives this is the rise of mobile.' (Hume, 2012 (interview)).

This means that the appearance of content is designed for readability on the wide and ever changing range of mobile devices and their software settings, from laptop to mobile phone. It achieves this automated interaction through a complex Content Management System⁸ (Ash, 2012) which allows for the automation of various editorial, visual design, navigation and storage processes, including the formatting of text, embedding multi-media, hyperlinking, metadata and archiving. This system is hugely beneficial for automatic linking and the distribution of a huge variety of content and media. (See figure 4-5). Moreover it is built for quick retrieval and placement of the large quantities of content that can be found on any news website.

In this system reading content can be based on individual circumstances and preferences, in terms of what it presents (sometimes text and visual elements are not displayed) and how it is presented (the various device standards) (Marcotte, 2010; Bates, 2013 (interview); Hume,

6. 'Responsive Web Design (RWD) can be implemented in many fashions. In our case [Guardian], we chose the mobile-first way, which means that we enhance the experience depending on your device, on top of the lowest common denominator: a simple mobile phone.' (Deloumeau-Prigent, 2013)

7. Internet address

8. An automated system that allows publishing, editing and modifying content, organizing, deleting as well as maintenance from a central interface

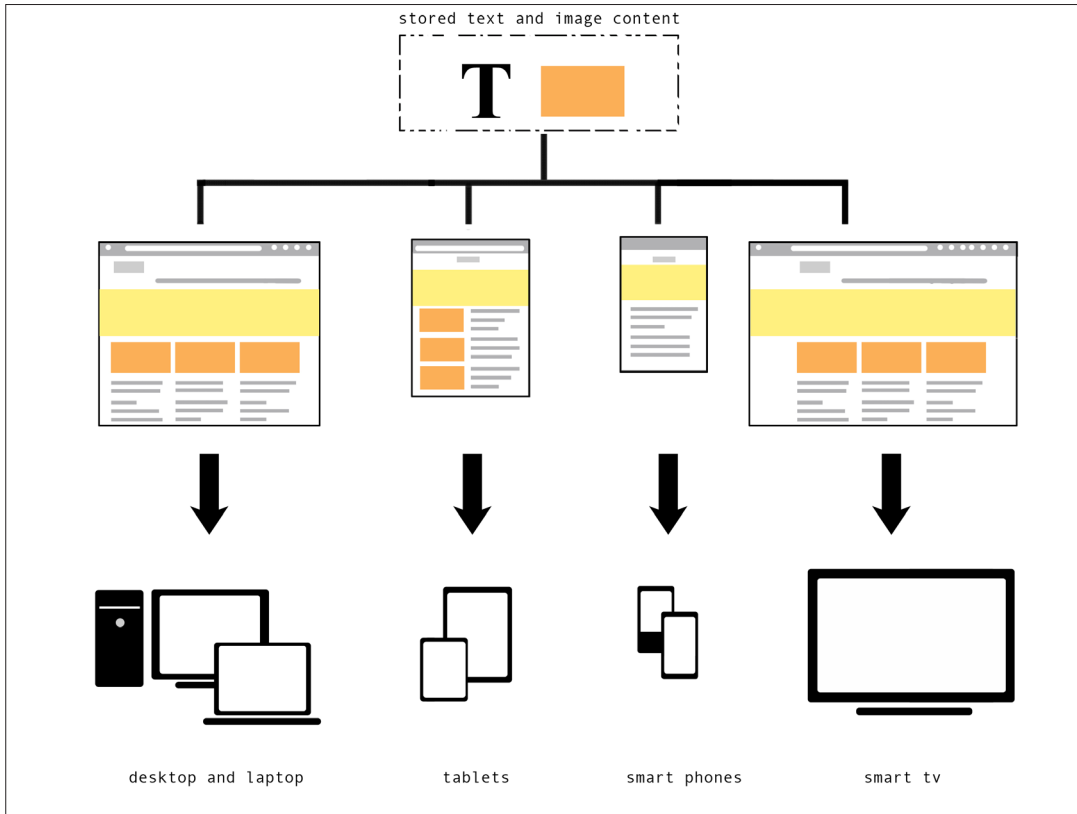


Figure 4-5: Diagram, Nanette Hoogslag, 2014. This diagram shows the principle formats of Content Management System (CMS).

2012(interview)). This system is still in rapid development and the consideration of reflection, for instance, is one area under consideration (Cashmore, 2012), a fact noted by Jason Sante Maria, creative director of Editorially⁹:

‘More articles, and websites in general, are focusing on slowing down to not only convey their story, but to set and maintain a mood for the reader’.
(2014)

But this setting and maintaining of mood is complicated when it comes to using illustration within the context of the content management system. The traditional illustration is fixed in its proportions and composition, and cannot always be reshaped or made readable to fit every size comfortably (Hume, 2012 (interview)).

A further complication is that visual information held within all images is still far too complex to automatically index. Additionally there are the deep structural challenges of finding an indexing system that would allow for the aesthetic and emotional values that are allocated to visual signs and the expressive and metaphorical usage of these signs (Joshi et al., 2011); the complexity of the dialogical relationship which editorial illustration has with the story means that to date, the fixed visual display and the ambiguous character of illustration mean that there are still very limited options for automatic positioning, scaling and placement, or for creating a subtle interplay with story and context.

4.5 The Failure of the Quality of Incompleteness in News Websites

What the case study reveals are the reduced possibilities for illustration to function as a visual hook, point of engagement and persuasion to read the story. The illustration is no longer guaranteed to be fully visible on the crucial primary window, on the home page, or any other place where it can actually draw the reader in. It could be argued that once the reader arrives on the article page, drawn in by a link placed elsewhere (and not necessarily within the *Guardian* website), the only task left for the illustration is to confirm that the reader has indeed arrived at the right location, and that the article is delivering the content the link had promised. The illustration here functions as a marker, rather than a persuader.

What the case study further reveals is that viewing an illustration within this editorial space has to be a deliberate act. It forces the illustration into a more independent position where it is more likely to be read as a piece of associated information. This shift has particularly negative effects on the deliberative function of editorial illustration, when the meaning that comes from a subliminal reading process that occurs through its direct proximity to the story, is lost. Once lost the particular relational form of translation that enables the editorial illustration to perform its role is broken.

This has seriously reduced editorial illustration's power to signify, thus enabling a process of understanding. If as a consequence of this more isolated position, the full meaning needs to be contained within the image, the illustration no longer illustrates, but instead becomes more like additional information.

In this web context for editorial illustration, two of the attributes, engagement and translation, are severely disabled, constraining their ability to induce deliberation.

Where the incompleteness of the illustration suggests a possible interpretation to the reader in the constrained context of print, it could be argued that the illustration in some way represents the reader's interpretation. As this is filtered through editorial approval, this illustration could function as an exemplary, *ideal*, response. In the printed edition, the position of the reader is mostly represented (Kress and van Leeuwen, 2006), as the possibilities to respond instantly are very limited. In the online context however, the reader is far more enabled. For example the reader comment section has become a feature of most reflective articles. For a certain period of time, reader comments, filtered for appropriateness (Guardian, 2009), are placed directly underneath the article, if and when they come in. The amount of comments is made clear at the top of the article, alerting all readers of their presence; in the case study there were 206 responses. Of course not all readers respond, but those that do present an active and engaged position, and in that sense they represent the *ideal* readers. Perhaps one could argue that the role of the illustration as the

representative of the reader is no longer needed, as this has been allocated to the visible presence of the collective response. In the news website the readers build their own illustration.

From interviews with practicing illustrators (Kenyon, 2012; Kisman 2012; Hoogerbrugge, 2012 (all interview)) and commissioners and users of illustration (Marshall, 2012; Ikink, 2012; Fenton, 2013 (all interview)) and illustration agents (Conningsby et al, 2013 (interview) plus my own observations, it became apparent that bespoke commissions for this online application of editorial illustration were understood to be, if not absent, then extremely rare. Most illustrations in this web position are the result of the adaptation of a print concept (Kenyon, 2012; Hoogerbrugge, 2012 (all interview)) or the use of stock photography (Marshall, 2012; Ikink, 2012 (all interview)).

It should now be clear that what the automated system of content management and mobile access first aim to develop is a structure that can respond, contain and distribute the wide variety of information available on the Internet, which can be instantly received by an ever changing variety of digital platforms. This design solution is as yet unable to deliver the more relational and multimodal notion of storytelling of which editorial illustration is part. But crucially this does not mean that the Internet itself is unable to sustain deliberative media productions. However, as a medium always shapes the expression of the media it contains (McLuhan, 2001; Kittler, 1996, 1999; Galloway, 2012), and in turn this determines the modalities of expression, the Internet is no exception in offering a very different structure of expressive dissemination for editorial illustration than the traditional print structure.

We can, however, assume the online continuation of editorial illustration will appear in very different modes, express its attributes in very different ways, in forms that are hard or even impossible for us to imagine. It is however my hypothesis that we can still encounter editorial illustration online, as defined by the attributes. This hypothesis will be further explored in Chapter 5, where I examine the conditions of online computer network, which enable editorial illustration to materialise and through a series of specific examples (*Test tube, The Best Amendment, ObamaHope and 100 Working Mice*), I outline and discuss how this continuity is apparent.

5 Current Conditions in Online Illustration

Chapter five explores the current status of online editorial illustration, outside the discussed website structures. It explores the technology and materiality of the online communication context and how this enables the support, transformation, and development of the presence of editorial illustration and what I have characterised as the key attributes of editorial illustration.

This chapter begins with an essential further exploration of the particular material and semiotic modality of illustration, which is key in understanding how illustration works online, where I distinguish between illustration as a mode and the illustrated works or media productions that feature illustration. This is followed by an overview of the key features of the online domain that are significant to illustration. Then through a series of examples of the use of illustration in online illustrated works, I explore their particular expressive capabilities in relationship to the constellation of attributes that I have defined.

Finally, as a key quality of editorial illustration, I examine how deliberation is enabled. To conclude I present how these different forms can be understood as editorial illustration and thus how editorial illustration is continuing.

When surfing the net it is easy to forget that, even in the seemingly fixed structure and format of a news website, each article is a independent media object and has its own web address, which allows them to be circulated independently through the Internet. But equally this allows news websites to link¹ to media objects that are not necessarily created within the design constraints of their website. Some of the media objects could better be described as *multi-media productions*, presenting a variety of expressive forms, including text, visuals, sound and interaction, and can be created by makers who are not necessarily commissioned by the news media publisher that features the link to their work. Some of these productions clearly present illustrational and textual narratives, whereby the material expressions of text and illustration are interwoven, and the difference between the story and illustration is always immediately apparent or visibly differentiated from the outset. I call these productions *illustrated works*. It is my hypothesis that these illustrated works represent both a departure from, and a continuation of, editorial illustration.

1. One of the essential features of networked computer systems is the possibility to link files through so called hyperlinks. Manovich defines these as: 'A hyperlink creates a connection between two elements, for example between two words in two different pages or a sentence on one page and an image in another, or two different places within the same page. The elements connected through hyperlinks can exist on the same computer or on different computers connected on a network, as in the case of World Wide Web.' (Manovich, 2001 pp.59-60)

5.1 The Material-Semiotic Modality of Illustration: the Illustration as Effect

The interweaving principle is possible because of the multi-modal attributes of the illustration. I argued in Chapter 3 (translation- attributes of language p.49), that multimodality is a pivotal capability, through which the work of the illustration and its continuities can be understood, as it migrates from platform to platform. Moreover I presented story and illustration as two complementary translations of the non-materialised text. Both are stories, but positioned in close proximity, one story, the illustration, is constructed to support the other. The critical point is to understand the story and illustration, not as two separate material objects, but as two modes of textual practice, where their range of expression depends on the particular affordances of the mediating context in which they are found.

Once illustration moves into the online digital world, it becomes far clearer that illustration, and thus story, is an emergent practice; ‘an effect’, not an artefact, to use Galloway’s terminology (2012 p.24). Illustration can be in the same mediatic expression as the story, for instance, both can be in written text, or both can be images and both can be situated within the same textual object. This allows story and illustration to interweave.

What marks illustrations apart from the story is their modality, the way they emerge, and it is the change of register that marks the transitions between the story and the illustration.

This means that when I encounter a textual object, I can only identify what is illustrated and what is illustration, during the experience. In principle this notion is equally true for the printed illustration, except that in print, editorial illustration has evolved within the technologies, the culture of newspaper publishing and the traditions of illustration as a field of practice. Here illustration evolved as a separate visual structure, and illustration and story became two seemingly separate objects.

Online the principles are being applied through online media structures and online culture; in online illustrated works, the manifestation can be far more intricate and fluid. Though the possibilities for medial expression are still in development, online media structures are already enabling particular digitally native and previously unexplored forms of illustration. The examples cited later in this chapter present various forms of such illustrated works, in relationship to which I discuss aspects of editorial illustration’s attributes.

But in order to establish these, I will first present an overview of the key features of the online domain that are significant to illustration.

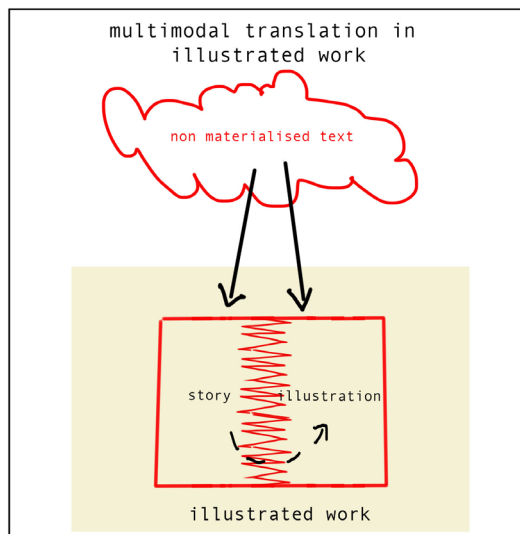


Figure 5-1: Diagram, Nanette Hoogslag, 2014.

This diagram presents the structure of a multimodal relationship and the emersion of text into story and illustration, where these are interwoven into an illustrated work, 2014.

5.2 The Components of Online Structure

The term *online*, which I use to define the online editorial illustration, stresses the accessibility through a computer and the active use of a computer system (Foldoc, 2014). This points to a continuation of the presence of the digital outside the computer itself, enabling it to be connected to a global web of computers; the Internet. In this thesis *online* further implies that the process and context are computerised, and content is materialised through a screen-based interface. This definition is based on the definition of new media as proposed by Lev Manovich in the *Language of New Media* (2002). In this he presents new media constructs as digitised, networked and multi-medial, based on the process of transcoding; where data is translated into computational units and transformed into multimedial output, output that is both cultural and computational, to be understood by humans or computers in a networked chain (2002 p.43-65). Together these define the material and semiotic conditions that enable the illustration to function. In the discussion of the attributes in this chapter I address new possibilities, such as: user input, nomadic behaviour (Beiguelman, 2006) and real-time action, as well as the questions they raise around modality, audience definition, intertextuality and duration.

What these particular digital technologies and material structures mean for the creation process, I address in Chapter 6, where I explore the interaction of digital and analogue materiality and creative processes.

5.2.1 Transcoding

The principle of transcoding is one of the primary features of all new media. The image that we see on a computer screen might perhaps have some semblance of an external world where we can decipher it for its representations and semiotic coding, but on another invisible level this image is a computer file, a machine-readable instruction that interacts with other computer files. Defined by Manovich (2002), the new media structure presents a *cultural layer (human readable)* and a *computer layer (machine readable)*, where the logic of this computer layer ‘can be expected to have significant influence on the traditional cultural logic of media’ (Manovich, 2002 p.64). However as van den Boomen (2014) points out, this principal can also be inverted, as the computer is ‘infused with cultural tropes and analogue representations.’ (2014 p.149)

Hayles presents this interplay with the digital and the analogue, which she calls an *Oreo structure*², where the transcoded analogue form as data is freed from its previous embodiment and as data can be transcoded into other forms.

She wants to get away from this output being one of strict digitality, she points to the different qualities afforded by the analogue (continuous and spectral, synergetic) and the digital (discrete, thus with finer control), processes which together allow for more complex and dynamic *heterarchies*. On the one hand it delivers a digital approach towards the creation of experiences, which is both levelling and discrete, and on the other it interacts with human social and material culture, which is distinctive and discursive.

5.2.2 Code - the Instruction

‘In order to program, you have to understand something so well that you can explain it to something as stonily stupid as a computer. While there is some painful truth in this, programming is also the result of a live process of engagement between thinking with and working on materials and the problem that emerges. Intelligence arises out of interaction and the interaction of computational and networked digital media with other forms of life conjugate new forms of intelligence and new requirements for intelligence to unfold.’ (Fuller, 2008 p.10)

On the computer screen, or in any case of digital representation, what the reader experiences is the manifestation of code. This points to the real

2. Oreo structure is named after a particular cookie that consists of two black biscuits with a layer of white cream in between: the initial and final analogue representations connected with embodied materialities sandwich between them a digital middle where fragmentations and recombinations take place (Hayles, 2005 p.207)

location of the creative and representational power, which lies within the written code (Manovich, 2002). But these creative powers of code remain hidden in a symbolic textual and mathematical language of instructions, that not only establish the aesthetic and behavioural properties of the experiential appearance but also the machine readable properties such as ease of copying, propagation, intangibility, volatility, and calculability of the illustrated work (Terranova, 2004).

Software, the written code, is a collection of mathematical algorithms instructing the computer to act. But code is also the result of a human creative process by coders and code writing programs. It points to code as a language, which is both mathematical and linguistic with the potential for narrative, but also possesses the strict logical structure through which this process has to be performed (Cramer, 2008). In semiotic terms what we see as interface is a sign that refers to the conceptual coded object³ (Sonderman, 2007; Boomen, 2014, Hayles, 2002). In the creation of online illustration, it is necessary to understand that the coded program inhabits all the necessary material, semantic and ideological attributes to create meaningful representations. But what is still needed is the data input, which is equally a location for expression.

5.2.3 Data - the Instructed

If code is the instruction language, then data is the instructed. Raw data, the un-analysed data, is a referent to objects, actions and behaviours real or conceptual, which are stored inside the computer and can be stored as anything from numeric, linguistic to sensory recordings. In form data, digits have no direct manifestation; they are electronic pulses with an on or off status- zero or one - and need processing and an act of mediation in order to be interpretable (Gitelman, 2013). Or as Mitchell puts it:

‘The essential characteristic of digital information is that it can be manipulated easily and very rapidly by computer. It is simply a matter of substituting new digits for old.’ (Mitchell, 1994 p.7)

There is common belief in data as neutral, which at a formal and mathematical level may be so, and this is encapsulated in the description above. This is the unit that is being referred to in the algorithmic calculations. But stored in the computer, data can also be the result of the human endeavours of retrieval and processing, signified by terms such as

3. Sonderman bases his understanding on the Peircian triadic sign-system of symbol, icon and index (Peirce, 1958-Collected papers vol 2 and 4). The essential point here is that in thinking about the digital image, one must speak of indexicality not in terms of a perceived ‘physical connection’ between the image and a natural profilmic referent, but in terms of a forced connection between a digital image (the sign) and the algorithmic process that creates or changes it (Sonderman, 2007-164).

data mining, data cleaning, and data visualisation, which is what determines which information is left out or selected; therefore it will always have a semiotic significance. Data needs to be understood as ‘framed and framing’ (Gitelman, 2013 p.5) and raises questions around veracity and interpretation – truthfulness and believability (Gitelman, 2013). This also gives data its potential to act not merely as fundamental building blocks, but as creative material to be used for illustration.

What makes data of further interest for illustration is the varied way in which it can be retrieved, along with automated retrieval processes, that give the data certain material properties such as quantity, velocity, continuity and growth. These emergent properties are forces that, through the translation of code, can result in particular behaviour that can be experienced; visualised. I explore this notion in greater depth in Chapter 6, as this is central in the creation of expression in the *data driven illustration*.

5.2.4 Big Data

For the creation of editorial illustration *Big data* is of particular interest, not only as it’s seen as a new location for current (news) stories (Segel and Heer, 2010; Guardian Data blog, 2009), but also because of its emergent and *live* properties. The term *Big Data*⁴ is currently somewhat of a *buzzword* for new forms of (automated and live) data retrieval and analysis. But perhaps more useful when discussing its cultural and semiotic position towards illustration is the definition by boyd and Crawford (2012) who propose that Big Data is ‘less about data that is big than it is about a capacity to search, aggregate, and cross-reference large data sets.’ (2012 p.663) This is a ‘cultural, technological, and scholarly phenomenon that rests on the interplay of technology, analysis and mythology.’ (2012 p.663) It is this particular mythic status of data believed to be representing truth, objectivity, and accuracy, where actually it is the result of multiple editorial decisions of mining, data cleaning and aggregation which creates a unique blend of ideological storytelling, where truth and fiction can meet.

Big data is not only a set of interpretable *numbers*, it should also be understood as a text, with in this case a particular hidden *textuality* (McKenzie, 1999) that can only be brought to the fore through the written code, that needs to be made visible. It is here that it becomes of interest as a material for illustration, as it not only has a material and referential significance but also a textual one. This notion is the basis from which I develop the aesthetic and semiotic experiences central to the case studies in Chapter 6.

4. According to Ward and Barker (2013) a summary of definitions used by major institutes would propose Big data as a term describing the storage and analysis of large and/ or complex data sets using a series of techniques including relational data bases, the processing of large data sets and machine learning.

5.2.5 Interface - the Process of Translation

Alexander Galloway sees the interface as the location of encounter, or manifestation of the digital object “being on the boundary.” He states:

‘It is that moment where one significant material is understood as distinct from another significant material. In other words, an interface is not a thing, an interface is always an effect. It is always a process or a translation.’ (Galloway, 2012)

More concretely Cramer and Fuller present the interface as the place where software links to hardware and the human user or other sources of data (Cramer and Fuller, 2008). Manovich reminds us of the central role of the computer screen, which is just a flat rectangular surface only giving a semblance of another space (Manovich, 2002), whilst Boomen extends the interface to include all objects through which we interact with the computer, including keyboard and mouse (2014). The interface can be understood as all of the above where it is both a communicative convention and a technological connector (Foldoc, 2014).

For illustration, though not by definition tied to the visual, the screen as interface is the most significant encounter, although the input through the keyboard or any other computer input devices should not be ignored. On the screen the illustration is not fixed, but in a process of emergence. As the result of a digital process it is not tied to one object, not always the same and not always present. When the computer is switched off, or presenting something else, the illustration is no longer present in its visual form.

The screen experience is not neutral, the human-computer interface - presented in a myriad of shapes and sizes - through which we experience the digital object is defined by the structure and design of the computer system, the browser, the windows of the individual program and the individual tools, and continually frame the presented work with their own ideological noise (or ideas of reduction of noise) that have become part of our interface culture⁵ (Beiguelman, 2006; Boomen, 2014; Cramer, 2008; Manovich, 2002; Pold, 2005). All these layers have become ubiquitous and are thus no longer noticed. Boomen would argue that the screen is a *nested interface* and the Graphic User Interface, the representational window, ‘a nested compound, consisting of relatively smaller user interfaces’ (2014, p.35), which include all of the above systems. But further still, the relationship between interface and reader is extended and hybridised beyond the screen, where through *QR-tags* and other *barcodes* the computer interface starts in printed matter, remains related to embodied objects outside the screen through to the extension into *augmented reality*, or through the *pdf format* or *print-on-*

5. Pold (2005 p.14) points to three kinds screen experience: *Illusionistic realism*: experience in pursuit a copy of the external world, *Media realism*: experience often dominated by formal investigations –and a *Functional realism*: regarding the computer and its software as a tool.

demand can result in printed matter. How we encounter computer information is extending and developing in ways that are no longer by definition centred around the computer interface alone (Cramer, 2014; Ludovico, 2012).

The interface is the defining manifestation of the illustration, which has always existed within contexts set by others. However, online the conditions are outside the control of the publisher and the illustrator, not just in terms of the quality of the screen, but the framing *noise* that will affect its expressive potential. How the illustration will be encountered is no longer clear.

5.2.6 Multimediality- the Expressions of Online Technology

Online the experiential vocabularies that have been extended through digitisation are further extended through those of the online network. Online experience materiality and its various modes of expression are the result of synthesising all possible sensuous media⁶ (Kittler, 1999) extended with the possibilities of human-computer interaction, automation, and the networks not only adding temporality and behaviour as expressive media, but the communicative capabilities afforded by connection itself. Manovich presents the experience of new media as a combination of the human computer interface, print and cinema, where he emphasises the cinematic (2002). Where indeed the multimedia experience can bring filmic tropes such as movement, zooming and cropping, as an illustrator I also recognise the computer experience as linked to the traditions of illustration. The computer experience presents many illustration tropes, from its immersive experience, akin to picture-books, to its tool icons, small pictograms, as well as the various combinations of text and image known from graphic novels through to the intertextual relations known in magazines and newspapers. But these questions around remediation are perhaps getting in the way of understanding the material affordance that is *native to the computer*, based on the principle of transcoding (Kittler, 1999; Manovich, 2002, 2006; Hayles, 2005).

5.2.7 The Online Network, Continuous Connection as a Mode of Operation

As I stated earlier, central to the notion of online editorial illustration is that the work can only be accessed through, or made operable with, a connection

6. The networked computer, at this moment, is as near as we are going to get in filling these gaps. But Kittler presents the experiences as eyewash where he places the digital structure as the real fundamental language (Kittler, 1999)

to the Internet. The illustration is not stored on the computer at hand, but elsewhere, on another computer, a server, which allows Internet access and the powerful network connections of distribution and reception that can be continuous and *wireless*, providing continuous *real-time* interaction with a community of known or unknown others. Moreover this means that work can be accessed at any time, from any location, investigated and altered, not only by the maker, but also by a host of anonymous others. Not only can the work contain live hypertext links, connecting itself to yet other works, it can be appropriated, dislocated, repurposed and redistributed through uncontrolled channels in ways that were never intended by the originators.

The Internet is on the one hand an open global grid that connects computer hardware and software, allowing software and content to be shared, stored and operated at the same time from different locations. On the other, it is also a particular social and dynamic distribution and reception channel⁷ (Terranova, 2004; Castells, 2001; Schäfer, 2008). In 2004, the same year Facebook was launched, Tiziana Terranova stated:

‘On the one hand, a technology implicated in the social collapse of distances, the imperialist homogenisation of times and the reduction of heterogeneity of the world to the one dimension of communication; on the other hand, a type of dynamic physical system characterised by a specific topological distribution, whose laws must be discovered and formalised. In between these different visions of the network lies the sprawl of Internet culture, with its vast digital archives, its mutating landscape of search engines and corporate pages, networked homepages, mailing lists, electronic newsletter, blogs and wiki’s, news sites and newsletters, spam and porn, peer-to-peer networking, bulletin board, chatlines and ICQ’ (2004 pp 63-64).

7. Terranova calls it a network of networks that allows various types of information systems to operate at the same time, based on a heterogeneous and open architecture model (2004). A principle that allows for a world wide web, email, Peer-2-Peer sharing, protected systems, social media, TV and radio distribution through to intranet, Cloud computing and the internet of things, where there is no central control, but a space conceived in terms of dynamic and variable relations between different communication networks.

8. With the enhanced accessibility to the Internet through increased speed around 2004, Social Media became a prominent feature. Formally Social Media was a group of Internet-based applications that build on the ideological and technological foundations of *Web 2.0*, whereby content and applications are no longer created and published by individuals, but instead are continuously modified by all users in a participatory and collaborative fashion. It allows the creation and exchange of so called *User Generated Content*: the various forms of media content that are publicly available and created by users. These applications can vary in use from collaborative content development such as *Wikipedia*, personal expression such as in blogs, websites specifically created for instant publishing through *Wordpress* or *Blogger*, sharing content such as in *Flickr*, *Pinsterest*, *Tumblr* but also *YouTube* and *Vimeo*, social networking sites such as *MySpace*, *Facebook*, *LinkedIn* and *Twitter* or virtual game worlds such as *World of War Craft* and virtual social worlds such as *Second Life*. (Kaplan and Haenlein, 2010) Many of these sites offer multiple channels of use and exchange and are used in multiple ways, depending on the individual user. The development of social media platforms is prolific, where sites rise and wane in popularity. Also other sites like news media websites, or promotional sites for commercial companies offer social media components or position themselves on social media platforms.

9. Giselle Beiguelman, a new media artist and academic, speaks of Nomadic practice: where a single digital art work can be presented on an array of interfaces, and at each location create its own particular semiotic relationship with its context. ‘We have updated McLuhan. The media doesn’t count, in the time of nomadic practices, the interface is the message’ (2006).

Ten years later these principles still hold, for the Internet presents even more the dynamic flows driven by events and popularities. But Terranova would have needed to take into account the rise of Social Media⁸ and review her list of examples, where *chat-lines* and *bulletin-boards* and *ICQ* are replaced by, for instance, social media, *Skype* or the proliferation of mobile apps that allow instant information on anything from train times to monitoring your private bank account. These platforms have been enabled by the spread of wireless and fast connections, which accelerated the notions of *collapsed distances*, *homogenisation of time* and the development of communication platforms towards *mobile first* (Chapter 4 p.73). The online network's ubiquitousness and ease of access is not only driving present network culture, but culture at large (Terranova, 2014) and in particular affects the publishing culture.

For illustration, the continuity, dislocation, and network mobility⁹, plus the *participatory culture* (Schäfer, 2008) where the reader is now a user, have had some far reaching consequences for its aesthetic and semiotic abilities, most notably in the aspects of real-time and user participation.

5.2.8 Continuity, Real-time and Duration, Qualities of Online Mediation

Real-time other than clock time points to the single global time of a continuous now, which collapses all local times and places and creates a single space (Terranova, 2004), with the exception of time-based events, where the length of an experience is fixed; real-time points to the inevitability of the next step that is unknown, a notion of imminence, and a process of becoming¹⁰ (Galloway, 2012). In a constructed object like the illustration, this can only be afforded when the illustration is somehow programmed to respond to real world events outside itself. As such it is a measurement of change, which can be seconds or years. It presents a particular process of continuous becoming, a particular duration. Terranova applies Bergson's understanding of duration to the effect of real-time, which she describes as:

...a qualitative change that every movement brings not only to that which moves, but also to the space that it moves in and to the whole into which that space necessarily opens up...Information is not simply transmitted from A to B: it propagates and by propagation it affects and modifies its milieu (Terranova, 2004 p.52).

10. In printed context, the editorial illustration also enables a process of becoming, but this comes from the *local* intertextual relationship between text and image (see Chapter 3 p.51).

11. In the continuation of this thesis - outside this section - I will continue to use the term reader or readers, despite the often interactive behaviour of the audience. It signifies the main task of illustration, that of aiding deliberation, asking the audience to reflect, rather than to act, even if it's to reflect on their own actions.

The notions of real-time and duration are further explored in the section Online Engagement in this Chapter.

5.2.9 The Central Role of the Active Reader

Enlarged Internet access brought with it a shift in audience behaviour, from being mainly interpreters to actually producing and (re)publishing media content, from readers to users¹¹ (Dean, 2010; Castells, 2011; Gurionova, 2013; Jenkins, 2002; Lovink, 2008; Schäfer, 2008). The audience not only does this by adopting, consuming, or modifying commercial products but, as Schäfer points out, it does so by establishing:

‘...an amateur culture on a global scale, expanding their own skills and increasing their technological capital, improving opportunities for social organization, and focusing on gaining political influence.’ (Schäfer, 2008 p.69)

Where this may create empowerment which can be understood in socio-political terms (Gurionova, 2012; Jenkins, 2006), it also creates an anonymous space for acted out fantasies (Zizek, 1997) and creative collaboration. Jenkins (2006) calls this an explicit form of participation, which requires the intrinsic motivation to be stimulated by a high degree of interaction, shared objectives and interest. What shouldn't be forgotten is that the present online network structure, Web 2.0¹², simultaneously affords an implicit participation, where behaviour, even a mere presence, can create informational footprints that are useful material in the hands of other producers, marketing strategists or illustrators, who can employ the behavioural data of readers to gauge, monitor, choreograph and predict¹³.

12. Web 2.0 is a term was coined by Darcy DiNucci in 1999. This term loosely defines ‘web applications that go beyond displaying individual pages of static content and allow a community of users to interact with the site and each other by adding or updating the content.’ (Foldoc, 2014).

13. Implicit participation can be through the (temporary) installation of ‘cookies’, simple text files on the user’s computer by a website’s server; information is stored in this text file that will enable the website to remember specific individual settings that enhance the user experience, but equally it allows this information to be analysed for different purposes (BBC, 2014). Other uses of user data is for target marketing, GPS locating, or journalistic analyses. But for instance in the case of the London Riots, the use of Twitter was both explicit participation, though the publicly shared information, as well as implicit participation, where the data contained in these messages was also used for analysis by police and media (Richards and Lewis, 2011).

5.3 Online Illustrated Works: Four Examples

To further discuss the impact of online modality on editorial illustration I present four examples of online illustrated works. They are all themed around current topics, seek to communicate and create a reflective response and each of them deploys online technology and structures in different ways. The examples represent four areas of content dissemination:

- **Interactive storytelling:** the story is told and illustrated through multimedia and computer aided interactivity.
- **Critical gaming:** the story is told and illustrated through language and structures of computer gaming.
- **Social media imaging (meme):** the story is told and illustrated through the deliberate repurposing and modification of existing images and circulation through social media structures.
- **Data driven storytelling:** the story is told and illustrated through programmed processes, based on internal or external data sets that determine the expression and signification.

Based on my hypothesis of the model of the four attributes of editorial illustration, defined through the thesis as manifestation, translation, reflection and engagement, I claim that each example does indeed contain the four attributes, but in each case displays them with different weightings and intensities, and often in new ways. In the last section where I review the four attributes, I will for each attribute focus on one specific example to highlight one particular aspect afforded through online mediality.

5.3.1 Example: Interactive Storytelling- the Test Tube (2010)

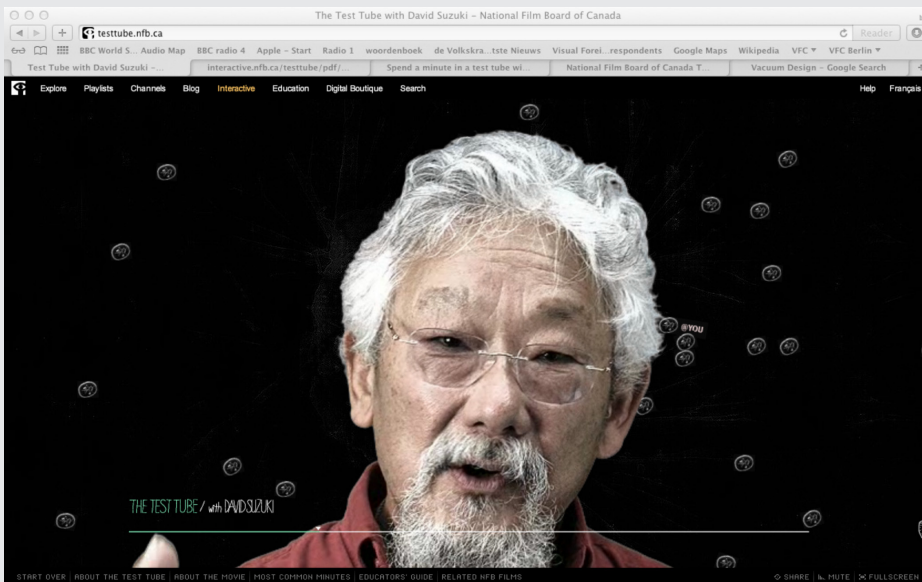


Figure 5-2a: The Vacuum Design for National Film Board of Canada, *The Test Tube*, screenshot, 2012.

URL: testtube.nfb.ca

Commissioned by: National Film Board of Canada

Produced by: the Vacuum Design- www.vacuumsucks.com

Format: Stand-alone web application available for web, ipad and iphone

The *Test Tube* is a programmed multimedia production with interactive and live networked capabilities. The production presents a contemplation on global overpopulation, exponential growth and over consumption through a

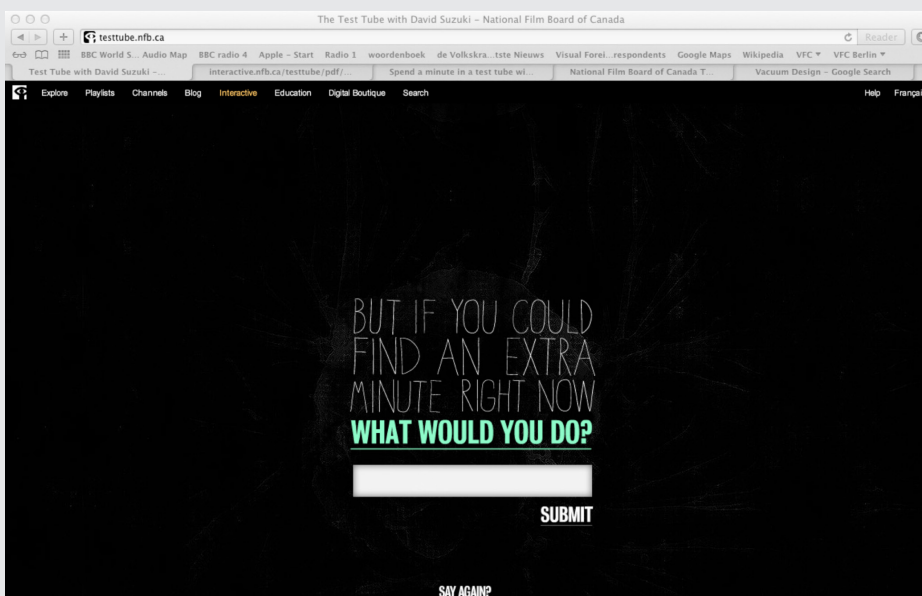


Figure 5-2b: The Vacuum Design digital National Film Board of Canada, *The Test Tube*- What would you do, screenshot, 2012.

precisely one minute lecture by David Suzuki, a prominent environmentalist.

The homepage (see figure 5-2b) opens with a proposition, introducing the reader as YOU, represented by a bacterium in the setting of a test tube, and poses a question: *if you could find an extra minute right now what would you do?* Only after the reader submits an answer, does an animated linear narrative present Suzuki's lecture.

The animation starts with the filmed portrait of Suzuki (see figure 5-2b), surrounded by a few scratchily drawn floating shapes that signify bacteria, one of them has the word YOU placed next to it. This notion of community is further enhanced as every bacterium is represented, through clicking a real-time *tweet*, with a text containing the same word initially submitted by the reader. During the lecture, gradually and exponentially more and more

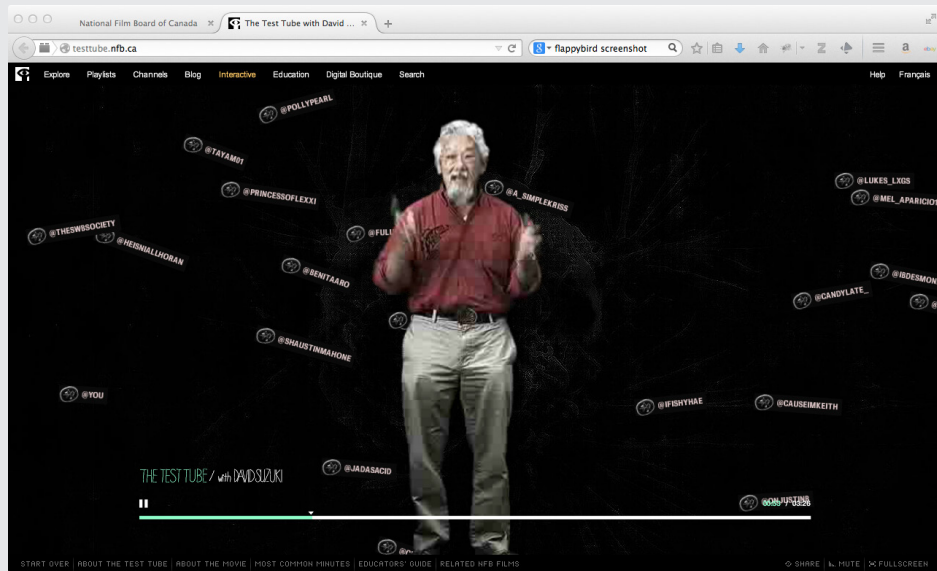


Figure 5-2c: The Vacuum Design for National Film Board of Canada, *The Test Tube*- David Suzuki, screenshot, 2012.

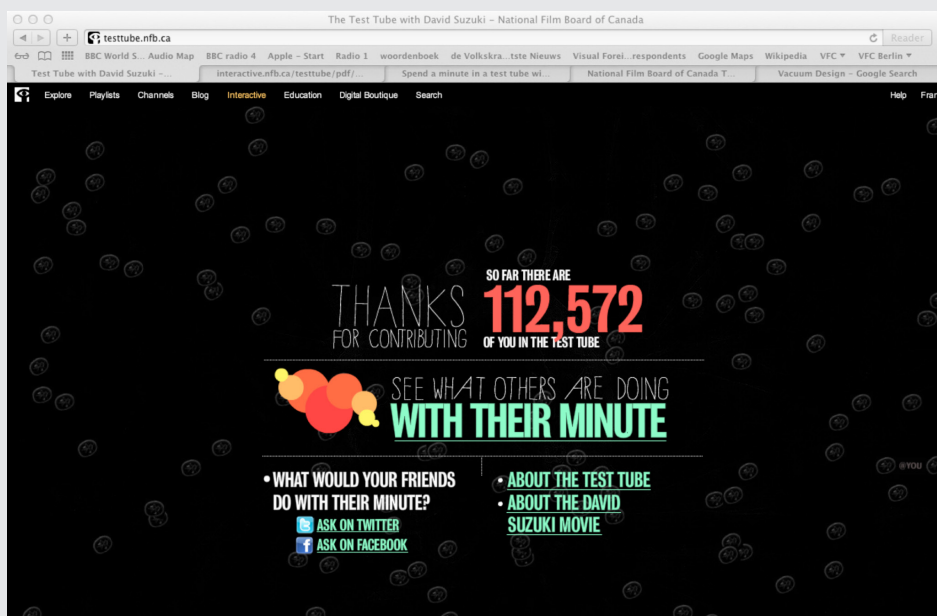


Figure 5-2d: The Vacuum Design for National Film Board of Canada, *The Test Tube*- closing screen, screenshot, 2012.

bacteria populate the screen. Eventually the reader finds him/herself in an over-populated test tube.

This is a work with a strong ideological and educational message, the ideas represented are clear and everything is geared towards creating real understanding. Mood and style oscillate between the starkness of the message versus the intimate and personable, using the coded visual language of its targeted young readership (National Film Board Canada, 2010). The work includes visual rhetorical tropes such as the personable gaze (Kress and van Leeuwen, 2006) of Suzuki and the implicating personal pronoun YOU which stealthily makes the reader become part of the problem.

The answers to the opening question create a personalised sub-theme, reminding the reader of his or her own continual presence, but it is equally a search query that results in a spontaneous online community.

After the animation the reader is able to contextualise their own experience (see figure 5-2d), where they are able to see what others are doing with their minute and the number of other participants. With the question '*What would your friends do with their minute?*' the reader is encouraged to participate further with promotional work through social media sites such as Facebook and Twitter.

The Twitterfeed is a pivotal form of technology, not only does it drive the amount of bacteria and in this illustrates the primary story told through Suzuki's lecture; it also creates a secondary engagement through play, to increase reader engagement.

5.3.2 Example: Game Structure- The Best Amendment (2013)



Figure 5-3a: Molleindustria, *The Best Amendment*- screenshot, 2013.

URL: molleindustria.org/the-best-amendment

Produced by: Molleindustria

Format: downloadable application

The Best Amendment¹⁴ is a satirical shoot'em-up game with *good guys* and *bad guys*. The game was made soon after the mass killing at Sandy Hook Elementary School in 2012 (BBC, 2012) and is a commentary on the proliferation of gun-use in America and its staunch defence by the American gun lobby.

The sensuous language of this work is that of a humorous, cartoon-like game (see figure 5-3a) with simple visualisations of characters and setting, straight forward game mechanisms of pointing and clicking, levels and game scores, supported by a looped jolly Bluegrass banjo tune, and shooting sound effects.

The characters are little cone shaped figures, with the main character in white, controlled by the reader, and the antagonist in black, which is automated and multiplies as the game develops. Furthermore there is a small bouncing star attracting attention, linked to the antagonists.

The aim of the game is to collect stars within a certain time-frame, which can be done by moving the white character over the star, but it is in competition with the antagonist who is also in pursuit of the stars. If you click the main character, it *shoots* and when the bullets hit the antagonist, it gets *killed* and increases the chances of collecting stars. However killing brings forth more, and more aggressive, antagonists. In every round the main character and the antagonists gather more firepower ranging from

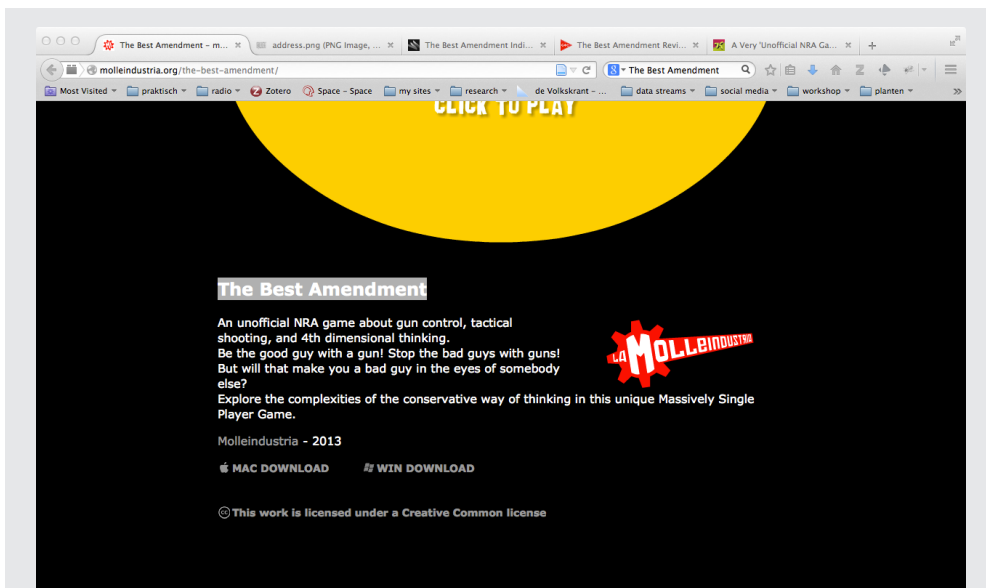


Figure 5-3b: Molleindustria *The Best Amendment*- download window, screenshot, 2013.

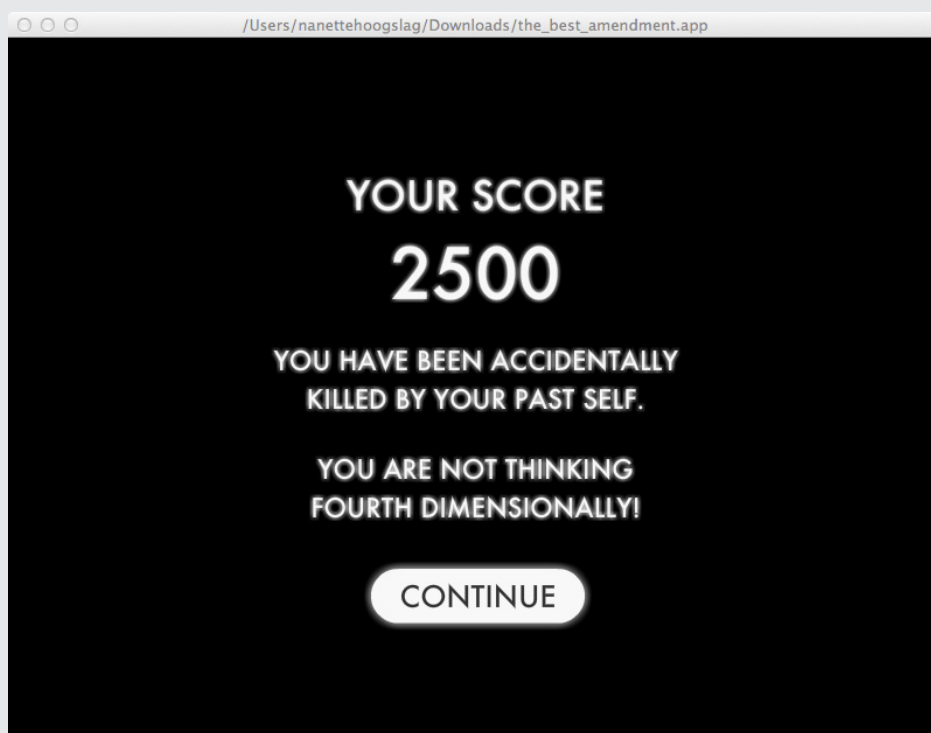


Figure 5-3c: Molleindustria, *The Best Amendment*- score window, screenshot, 2013.

rifles to surface-to-air missiles, which intensifies the killing.

In this game the player doesn't have to shoot to collect points or stay *alive*, stay in the game. Just by outwitting the antagonists, the game and the collection of points can go on indefinitely. In fact the antagonist is constructed as the ghost of the main character, copying his behaviour and tracing the paths previously made.

5.3.3 Example: Social Media Imaging (Meme)- Obama Hope- (2008- ongoing)



Figure 5-4a: Anonymous, selection of Obama Hope memes, screenshot Google Browser, 2014.

URL: various

Produced by: various

Format: digital image formats such as png, jpeg or gif, print media

Obama Hope is the name given to a family of Internet images that started with the iconic election poster carrying the portrait of Barack Obama created by Shepard Fairey (2007) (see figure 5-4b). that became synonymous with Obama's victorious 2008 election campaign. Already in the spring of 2008, a few months after its release, parodies of the campaign poster started to appear online and *Obama Hope* started its life as an Internet *meme* (Know your meme, 2007-2014). An Internet meme¹⁵ (Shifman, 2013) is a specific Internet phenomenon, usually in the form of a small multimedia work or still image that follows a tight format and is a blatant mutation of an original source, where the visual image and concept are adapted to local understandings and abilities of expression (see figure 5-4a). Memes emerge and proliferate through anonymous networks and are principally disseminated through social media platforms and websites, although occasionally the images can move into print media (see figure 5-4e) where they can be continued through the same mechanisms (see figure 5-4f).

15. The term meme was coined by Richard Dawkins in his book *The Selfish Gene* (1989), as an attempt to explain the way cultural information spreads; Internet memes are a subset of this general meme concept specific to the *culture* and environment of the Internet. In 2013 Dawkins characterized an Internet meme as being a meme deliberately altered by human creativity - distinguished from Dawkins' pre-Internet concept of a meme which involved biological mutation by random change and spreading through accurate replication as in Darwinian selection (Solon, 2013). Further, Internet memes carry an additional property that ordinary memes do not - Internet memes leave a footprint in the media through which they propagate (for example, social networks) that renders them traceable and analysable (Wikipedia, 2014).

For a meme the purpose lies not in the creation of an original work, but in its ability to find dormant possibilities within a seemingly fixed frame of signification and use of the grammar of the original work as a language through which to communicate. The anonymous maker uses his or her expressions of individual power to critique and publish. While most memes are trivial, some are clearly ideological, yet directly or indirectly all reflect on modern culture and current events (Know Your Meme, 2007-2014; Goriunova, 2013).

5.3.4 Example: Data Driven Illustration – 100 Working Mice (Practice Research)

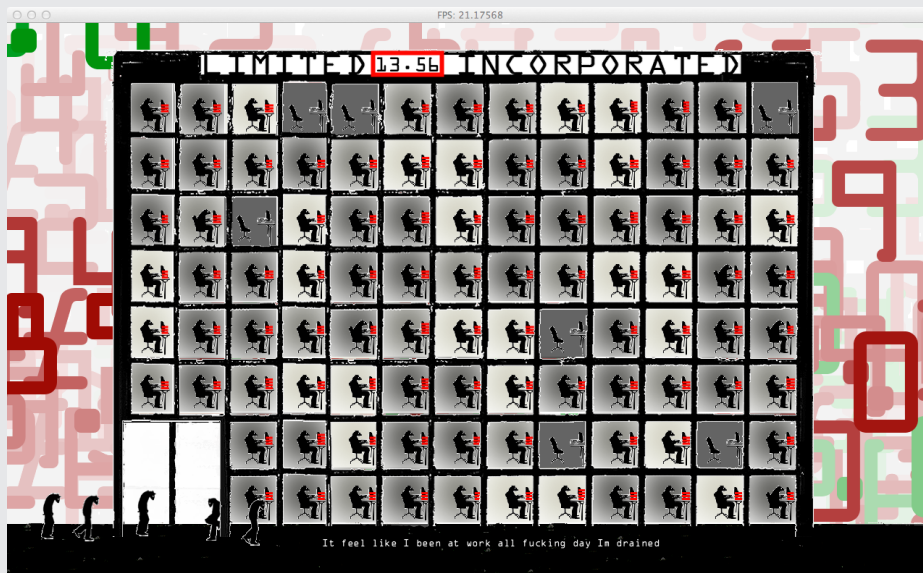


Figure 5-5a: Nanette Hoogslag, *100 Working Mice- daytime*, 2014.

Where the other examples have a presence online, this work is a *proof of concept*¹⁶ and is part of this research practice, it has not been released online. This practice is extensively described in Chapter 6 (see Volume 2 pp.56-70 and usb drive). In the context of three other examples, I introduce this work and the method of illustration it represents, in order to compare its abilities and expressions through the attributes.

100 Working Mice has been created as part of practical research into how and if automated and live editorial illustration in the online environment is viable, taking its cue from Data visualisation and what I call *Big Data stories*, the interpretation of information found through the mining of *Big Data* streams; it explores a possible method of *data driven illustration*.

16. A proof of concept is a realization of a certain method to demonstrate its feasibility, whose purpose is to verify that some concept or theory has the potential of being used.

The work illustrates a critical report on the present work-life balance, ‘Why we all need a shorter working week’ (Coote and Franklin, 2013), and reveals more general current thinking around alternative economic models beyond a market driven economy¹⁷, although it makes a grim representation of the present -live - working situation.

It presents the daily routine of an imaginary office through the actions of anthropomorphic characters *WorkerMice* and *CleanerMice*, where the behaviour of these mice and all other objects is based on real-time data coming from various sources such as Office for National Statistics, time, weather, Twitter and the London Stock market.

The animated elements are looped but recombined continually in various orders, densities, and interrelationships, which is the result of the instrumental use of data and programming. The data is released through various online public and open access channels such as the Office for National Statistics: (ons.gov.uk) or Yahoo.com (uk.finance.yahoo.com) Some data will be continual, updated every few seconds or every few months, and this presents simultaneously a continual image and continual change, with interspersed moments of activity and change.

A fundamental difference with traditional animation is that actions and behaviour are programmed to respond to real-time events.

5.4 Online Manifestation

In Chapter 3 (p.47) I presented the *attribute of manifestation*, the aesthetic experience of the illustration, as revealed through the technology and materiality of the platform and the outcome of expressive play that not only exhibits a creative process but also reveals the medium itself and all it represents.

The online illustration is created through a selection from all the possibilities of multi-medial expression afforded by the computer, taking into account the context of local limitations such as time, skills, money, available technologies, etc. Although appearing to be traditional or non-digital once they are scanned or simulated in software packages such as *Photoshop*, illustration’s traditional range of material expressions such as drawing, painting, or collage are as expressive as those found in other media traditions, or those deemed *digitally native*, like vector-based drawings, morphing, programmed and interactive experiences and those afforded through the network: streaming data properties (see Chapter 6 p.96), real-time, locative and so on. In material terms, once digitised, all these expressions become of the same order. Style and expression do not only

17. such as the OECD-Better Life Index: oecdbetterlifeindex.org Genuine Progress Indicator: rprogress.org/sustainability_indicators/genuine_progress_indicator.htm

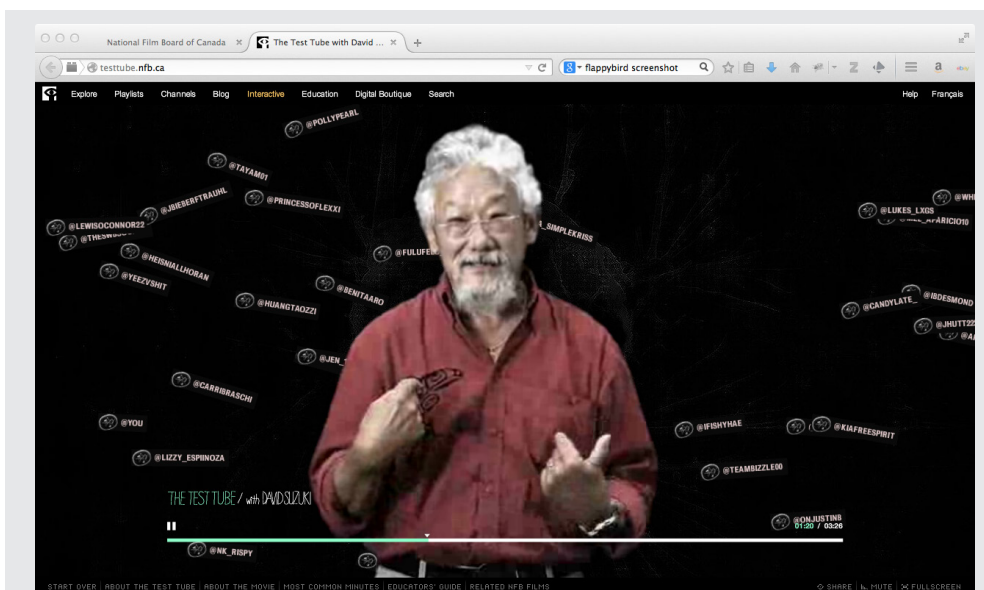


Figure 5-2e: The Vacuum Design for National Film Board of Canada, *The Test Tube*- David Suzuki, screenshot, 2012.

reside within the application of one particular medium - whether painting or drawing -, and online this has extended to the choice of media and the entire group of mediatic expressions, starting with the choice as to whether to use visually.

This understanding of online illustration is both shaped by a materialist approach to new media (Manovich, 2002) and a semiotic, ideological continuation of digital subjects (Galloway, 2012; Kress and van Leeuwen 2001, 2006; Hayles, 2005), brought together in an illustrated work.

During the one minute lecture produced in *Test Tube*, there are multiple layers of mediality within one frame: you see video footage of the speaker, *Suzuki*; hand drawn animated shapes- the bacteria; text in various forms, most obvious being the labels of the bacteria and the personal pronoun YOU; there is a sound layer in the form of the spoken word and a soothing soundscape; interaction in the form of clickable buttons and an interactive timeline; and in the periphery of the immersive plane¹⁸ the computer and web functionalities are revealed, pointing to existence outside the frame. The modes of expression are further extended through the use of temporalities: the deliberate one minute time line as well as real-time Twitter feeds and user-behaviour.

Not only are all these medialities presented on the same screen, but each represent within them various flows of signification through the modalities used (Kress and van Leeuwen, 2001). *Suzuki* in his talk on over-population

18. Bolter and Grusin point to the display of digital information, which presents its content with the logic of immediacy or hypermediacy that are not exclusive to each other. Immediacy points to the intent to create an immersed feel where the 'medium itself should disappear and leave us in the presence of the thing represented' (2000 p.6). While hypermediacy points to the intent to create a sense of diversity, 'where the reader can select from a jukebox of images to generate a panelled display.' (2000 p.6)

verbally refers to a test-tube as an example - he thus illustrates in the mediality of the spoken word, but uses two modes - storytelling and illustrating. When you encounter the work it is not declared which mediality will be illustration, but during the experience the transitions between the modes of expression are clearly marked, through the tone of his voice and expression of his face.

In *Test Tube* the story appears in many modalities, not only in the form of written typeset text, but also presented as oral lecture, through to the written instructions and explanations on the website, and arguably the *Twitter* texts represent both modes of illustration.

5.5 Online Translation

In Chapter 3 (p.49) I presented the attribute of translation as intersemiotic and multimodal, moving between story and illustration, with the translation presented through the illustration supporting the story. What needs to be taken into account is that illustration uses a mode of representation that not only distinguishes itself from the story, but one that is specifically created to be understood by the intended reader.

But online this coded language of the reader no longer necessarily needs to be implied, but can be adjusted, automatically or by the reader, into a bespoke interpretation. Within illustration, iteration and the reworking of images have always been much-used tools for signification, not only by the illustrator, but also by the readers themselves; for instance in pastiche and visual parody (Male, 2007; Heller and Chwast, 2008; Crow, 2010), in the simple act of drawing a moustache on a printed portrait. But online, this capacity has been enhanced, through a combination of the ease of manipulation and the ease of circulation, where readers themselves can post these altered illustrations instantly on their own network.

These interjections alter the signification of the whole, or parts, of the work, but in order to become a personal interpretation, rather than an entirely different work, they still need to contain notable traces of the original illustration relationship. In that way they are not only a personalised response to the story, they also respond to the original illustration.

The reader who freely alters, and the producer that creates the interactive possibilities for alteration, no longer treat the illustration as a finished entity, but rather treat a particular illustration as a language for commentary and extension. Not just for extension of the illustration, but a process of extending the story.

The meme *Obama Hope* (p.94), is typical of such illustration as language formation. In this meme bespoke alterations do not remain a single referral to a particular image, but become a shared visual vernacular through which groups communicate online, using the accessibility of manipulation software and the speed and connectivity of the Internet. Communication is both through the creation of the next iteration as well as in the circulation of existing ones. In this way I present meme as a language. Shifman presents memes not as single ideas or formulas that propagate well, but as ‘groups of content items that were created with awareness of each other and share common characteristics’ (2013 p.367). He points to the importance of stance: ‘the way addressers position themselves in relation to the text, its linguistic codes, the addressees, and other potential speakers’ (2013 p.367). Stance in other words is a particular modality through which the meme communicates with its readers.

Obama Hope taps into different modes of the signification present within the original image, through its story, message, visual and textual expression. Its reuse of these modes becomes a visual language to proclaim ideas that on the one hand seek to translate and update the original message and form, yet on the other seek to express alternative narratives and meanings to new local and global audiences.

The importance of the trace of the original points to the notion of the *afterlife*, a term developed by Walter Benjamin (1992) in relation to the translation of a text, where translators need to consider with every translation they make the continuously changing temporal and cultural settings, which affect the choice of words. Online this analogy of the afterlife is interesting, considering that images are no longer fixed in time, but through search-engines and decontextualisation are continually part of a present. Independently from each other, through different communities of translators, the meaning of the image gets continuously updated. For instance: *Obama Hope* is redefined as a translation of *Obama as President*, growing from developing presidential candidate to president elect and president re-elect. Growing from Hope to Nope, gradually mutating from hero to villain (see figure 5-4b, 5-4c, 5-4d) but *Obama Hope* is also translated as signifying a particular notion of power, hope and vision critiqued in positive and negative ways. Through the use of visual grammar, like the colour scheme, the stencil qualities or the capital lettering, some *Obama Hope* memes bring new issues into the same frame or critique as the original poster with its accumulated histories, including the form and the aesthetics of the image itself.

What further points to the ability of the meme to be a language is the presence of meme-builders, specifically designed online software where any photograph and any text can be instantly changed into this particular meme¹⁹.



Figure 5-4b: Shepard Fairey, *Obama Hope poster*, 2008.



Figure 5-4c: Anonymous, *Obama Hope meme-nope*, no date.



Figure 5-4d: Anonymous, *Obama Hope meme-yes we can read your emails*, no date.



Figure 5-4e: Tony Ward, *Cam's the man...the Sun is backing Tory leader*, for The Sun newspaper, 6th of May 2010.



Figure 5-4f: Anonymous, *Obama Hope meme-our only hype*, no date.



Figure 5-4g: Anonymous, *Obama Hope meme-President in Waiting (Sarah Palin)*, no date



Figure 5-4h: Shepard Fairey, *adopt*, for adoptapet.com, printable pdf 2009

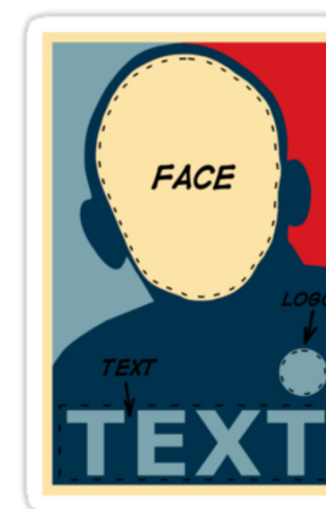


Figure 5-4i: Anonymous, *Obama Hope meme-text*, no date.



Figure 5-4j: Anonymous, *Obama Hope meme-yes we can*, no date.

5.6 Online Reflection

In Chapter 3 I presented the attribute of reflection as the relational attribute. Where the illustration points to presence of *interactive participants*, in this case: the story, the editor, the reader and the presence of the illustrator, the final illustration is the result of both a relay of intent and equally a guessing game directed by the editor at the reader's capacity for interpretation. The guessing game begins by ensuring that the appropriate reader is approached and engaged. In contrast to a newspaper, where the reader is already present and identified, the online illustrated work is in a more autonomous position where finding and capturing the reader is more complex with less control (Dean, 2010, Žižek, 1997 Schäfer, 2008).

That the publication and its editors are reflected in the printed illustration is implicit because of the material links, the newspaper is a fixed context. Online however this implicit connection is broken, the illustrated object needs to be found by its readers and the intent of the publisher needs to be reflected at the moment of encounter.

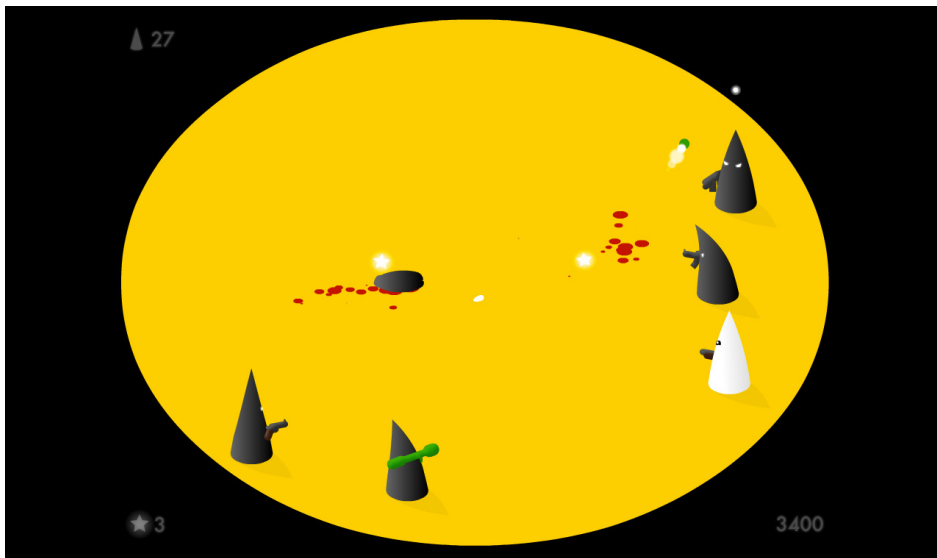


Figure 5-3d: Molleindustria, *The Best Amendment*, screenshot, 2013.

This is apparent in the case of *Best Amendment*, as the work is only found through particular and already defined networks of distribution. They colour the way the work will be approached, as a game²⁰, as a cultural phenomenon²¹, as news²² or perhaps on personal grounds²³. In the case of the *Best Amendment*, which is freely accessible on the web, the producer not only makes it clear what the reader could download (a game), but also

20. indiestatik.com/2013/03/18/the-best-amendment or gamesforchange.org/play/the-best-amendment

21. wired.com/2013/04/nra-the-best-amendment or boingboing.net/2013/04/05/best-amendment-a-game-that-pl.html

22. business.financialpost.com/2013/03/21/the-best-amendment-challenges-players-to-ponder-guns-and-games/?__lsa=49c6-8349 or reddit.com/r/GunsAreCool

23. youtube.com/watch?v=leY9tU7u5uU or twitter.com/molleindustria/status/313646846591520768

through the use of lingo establishes a particular readership and a particular approach. *Molleindustria* states:

‘The Best Amendment; an unofficial NRA game about gun control, tactical shooting, and 4th dimensional thinking. Be the good guy with a gun! Stop the bad guys with guns! But will that make you a bad guy in the eyes of somebody else? Explore the complexities of the conservative way of thinking in this unique Massively Single PlayerGame.’

(Molleindustria, 2013) The website encourages journalists to use the game, and actually invites negative response: ‘We love hateletters!’

But once downloaded the positions of the participant becomes less clear. The story in the game structure follows its own logic, one of its particular qualities is making the reader ‘inhabit a twilight zone where he/she is both an empirical subject outside the game and undertakes a role inside the game.’ (Juul, 2001) In other words the reader is both helping to construct the story as well as reading it. In *Best Amendment* not only is the reader the player, he or she is also being played, and his or her behaviour is part of the illustration. The reader-cum-player is directing the *good guy*, personified by the cone shaped character that happens to be rather reminiscent of a member of the Ku Klux Klan (see figure 5-3a, 5-3d). The good guy also carries an increasingly large weapon that can shoot and kill, something implicit in the rules of a *shoot'em-up* game, although shooting in this game is never stated as necessary to score points (see figure 5-3b, 5-3c). Juul points out that for a player ‘the goal has to be one that you would conceivably want to work for.’ (Juul, 2001)

He also stipulates that the ironic use of a negative goal is the exception. *Best Amendment* uses this ironic usage deliberately to question the reader’s attitude, particularly when he or she gets pleasure from the shooting (Salen and Zimmerman, 2004). In this game *not-shooting* makes the player a good guy, one which eventually scores the most points, and will never die. This is something the reader-player needs to find out through reflecting on his or her own actions and requires the reader to step outside the game and consider the intent (see figure 5-3c).

Best Amendment is a serious or critical game²⁴, a genre of games that deliberately uses game structures and game behaviour to create socially engaged commentary (Games for Change, 2014; Flanagan, 2009). The immersive interaction, where the reader takes part in shaping story and illustration, shows how through automated structures, the representation of

24. This use of game is not unique, it is part of a movement of reappropriation of computer game methods and lingo as a vehicle for critical response. Flanagan defines critical play as ‘create or occupy play environments and activities that represent one or more questions about aspects of human life. These questions can be abstract, such as rethinking cooperation, or winning, or losing; or concrete, involved with content issues such as looking at the U.S. military actions in Cambodia in the early 1970s. Criticality in play can be fostered in order to question an aspect of a game’s “content,” or an aspect of a play scenario’s function that might otherwise be considered a given or necessary.’ (Flanagan, 2009)

the *interactive partners* can be redefined. Equally the direction of the game shows how the editorial intent stays intact; where on the website the intent is explicitly declared, during the game this emerges through the way the game is directed and the behaviour of the player is rewarded.

5.7 Online Engagement

I described the attribute of engagement as ideological, where the role of the editorial illustration is to highlight the message of the story and create an interpretation that is not only noted, but above all considered by the reader. The constructed illustration can create this sensation of legitimacy by tapping into the beliefs and personal codes of the reader and link these with the story. As this is an editorial story, it presents an ideological reflection on an ongoing public concern.

Online structures no longer guarantee that the illustrated work will be anchored within a fixed ideological context, and this means publishers need to employ different mechanisms to safeguard their ideological message and convince the readers. But when the editorial story is told not so much through oral or written modes of textuality, but through a *hidden textuality* (Hayles, 2005; McKenzie, 1999), it might not always be clear that the work is actually illustrating, pointing to something outside the experience itself. This is specific to data driven illustration or data visualisation, where data and code are the drivers of the story. If there are no strategies employed to ensure the reader recognises the presence of this hidden story, the ideological message might be missed. This notion is also further explored in the case studies in Chapter 6.

100 Working Mice is an online illustrated work, which is driven by real-time changes in the various data sources to which it connects. It can be encountered as an ongoing presence in a public space (for instance, a living room, office or urban space), where the ideological context might not always be clearly represented. This particular illustrated work presents two kinds of experience: an instant visual experience, but also a durational one, presented in real-time and showing subtle and sometimes significant changes. Both the instant and durational experience need to be understood as story and illustration, although due to a possible lack of ideological context, the ideological sub-text must be present, recognisable and part of the immersive experience.

100 Working Mice aims to achieve this through presenting a single fixed immersive scene, where all the elements are conceived within one ideological framework, allocating visual and behavioural modes to particular actors to signify their roles. Having fixed the actors, this allows the creation of a continuous illustration, continually reiterating the same illustrational narrative, but constantly measuring it against the hidden

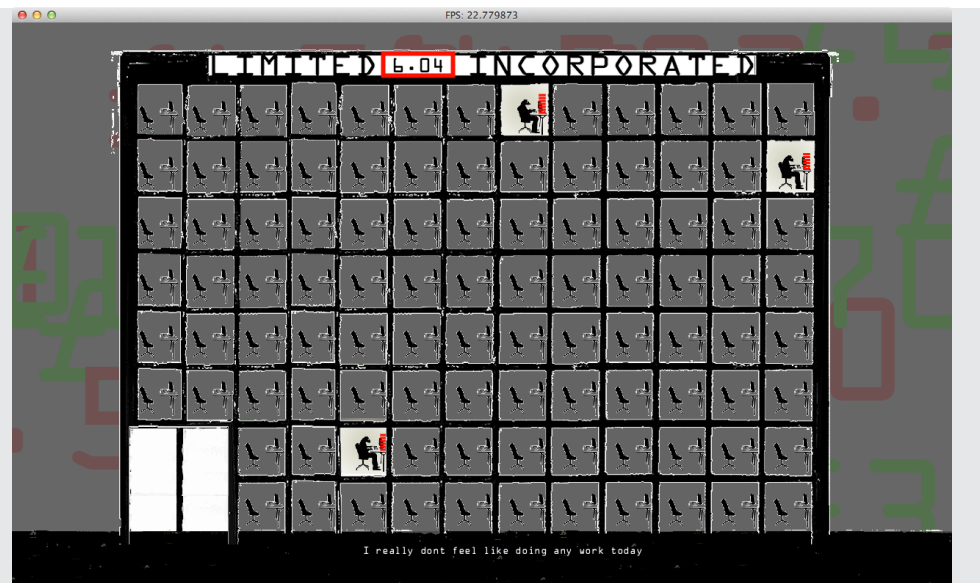


Figure 5-5b: Nanette Hoogslag, *100 Working Mice*- night time, 2014.

editorial story. This presents real-time actions, inflected through the live or automatically updated data.

But to understand *100 Working Mice* as something *real but interpreted*, it needs to point outside its frame to the real world. This is achieved through making some of the live data connections explicit and verifiable, such as the presence of local time: the clock; a live presence: the updating *Twitter* text, and the constantly changing red/ green visualisation of the rise and fall of the stock market. Other mechanisms to convince the reader of its validity are the visual coding and references to shared and current iconology: like the anthropomorphic character of the Mice, that have recognisable modern human silhouettes and movement; the iconic shapes of an office, office desks and computers or the caricatured typing, slouching or cleaning behaviour of the acting mice.

They all echo notions of modern urban working life, and are further enhanced by the day-night rhythm and the nine to five working pattern. The illustration seeks greater authenticity through the presentation of unique patterns such as the hours of overtime, and the sunset-sunrise that are set to local times. Above all it aims to create emotional recognition through a continually changing single *Twitter* 'tweet', as a caption at the bottom of the scene.

The *Twitter* text is automatically selected through an algorithm that dictates that the selected tweet must literally contain the words: '*work*' and '*feel*'. In most cases the result is a sentence that reads as an emotive statement about a work situation. This caption not only creates empathetic signification, but sometimes creates a humorous clash between text and image. The temporary caption anchors the visual story, but because it continually changes, it creates new and related stories. All this occurs within a very short time frame, the aim being to entice the reader to engage, just to see what the next image-text relationship will bring.

The presence of these recognisable and verifiable elements suggests that these random shifts in behaviour are equally linked to verifiable sources, in this case the statistics of a reputable source, the *Office of National Statistics*. This is not necessarily directly deduced from viewing the illustration, but something that becomes apparent over time. In this way the reader can create a more durational relationship with the illustrated work.

5.8 Something Deliberately left Unanswered

My hypothesis is that editorial illustration is a tool for deliberation. Illustration does this not through giving more information or explanation, but within the limits of the context, it points to ways for the reader to interpret the story. Online, far more information than ever is directly available, in multiple media formats and technologies that can bring these together, particularly with real-time immediacy as the experience (Boomen, 2014). The reader can inform him or herself far more extensively and continuously. Jodi Dean (2010) argues that the open-ended offer of continuous information makes it impossible for the reader to decide at what moment they actually know enough to claim understanding, as the potential is always there that some crucial piece of information has been missed. She problematises this offer of too much information, which she claims actually creates a failure to be informed. The issue of too much information, information overload, and the problems of the loss of control with the Internet and computer as operative tools is widely recognized and discussed (Carr, 2010; Lovink, 2012; Shenk, 1997; Crary, 2013). Žižek (1997) presents the risks of the Internet and the computer as all consuming information systems. He pleads for the importance of a mental space left open, not filled with (virtual) experiences and information, but something that is deliberately left unanswered, other than through the vagueness of the notion of belief, or trust in an ideology; he makes a plea for the importance of incompleteness.

The examples discussed of the online illustrated works, even the most obviously multi-mediatic ones such as Test tube, do not employ the various media formats to even attempt to create such near-totality of informational experience. These illustrated works deliberately limit the amount of information offered, and start by purposely creating, if only for a moment, a separate, limited and immersive environment.

The story, in whatever form, is not extended with evidential or informational media streams, instead media modalities are used to deliberately allow and create *gaps*; things remaining untold. Ambiguous signs such as metaphors, symbolism, codes and expressive marks are used to invite the reader to enter a deliberative process.

In online illustrated works the invitation seems to extend to active participation of the reader. This invitation is based on the supposition that online readers have an expectation of becoming involved (Schäfer, 2008),

which starts with the decision to *open, download or press the start button* and often ends with a request to circulate the work. Perhaps even more than with print, the task of making meaning is placed in the reader's hands. Where framed in a clear context, and with the relational proximity of a story, editorial illustration can deploy this mechanism of user involvement to its advantage, but to create these conditions is also one of the biggest challenges facing practitioners who choose to embrace the online domain.

5.9 Online Editorial Illustration

Online conditions offer editorial illustration a wide range of experiential and aesthetic expressions, specifically the digitally native notions of temporality, along with behaviour arising from networked circulation, real-time and user involvement. But at the same time, the same conditions imply that the initial publishers/makers are no longer in full control over either the semiotic expression or the dissemination of media objects. For the online editorial illustration to fully function, the context and means of circulation need deep consideration. Of particular interest are online illustrated works, distinct media productions, where story and illustration interweave, fixed within a considered ideological structure. In terms of circulation, this means that although a preferred reading cannot be guaranteed, at least the chance that they are moving through channels frequented by intended readers and their networks is enhanced.

These illustrated works present a wide range of story-illustration relationships and aesthetic and behavioural expressions, where it could be argued that they cannot be easily understood as one distinctive category. They could instead be considered as one of the many forms of media production. However I argue that they are specifically created to reflect on a current concern, not through documentary or any other informational form, but through the employment of illustration and illustration tropes. The presence of the illustrational narrative is essential whilst crucially presenting the same constellation of attributes of editorial illustration. Though the constellations might present a different formation for each work, these works ultimately offer deliberation.

When halftone printing brought new technological conditions for the printed newspaper, this not only offered a new materiality, but a new illustration culture with distinct expressive forms and new semiotic relationships, which developed into a particular and distinct field of illustration: editorial illustration.

I propose that the online materiality, technology and online editorial culture and the particular affordances this offers editorial illustration, found in forms of online illustrated works, warrant to be noted as a new distinct field: online editorial illustration.

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6 Exploration of Data Driven Illustration – three case studies

Chapter 6 presents the practice dimension of this practice led research. These are the processes and outcomes of the practice that have been instrumental in developing the thesis and deepened the theoretical understanding. The practice consisted of a series of studies, developed alongside the theoretical work, which explored a method of illustration I describe as *data driven illustration*. This is a method based on the creation and activation of an illustration through programmed data sets and/or live data streams, which can use all the qualities of online mediality, as already elaborated in Chapter 5. In this chapter I first introduce the concept of *data driven illustration*, as it relates to practice and discuss the methodological approach that led to its development, including key features such as the particular programming language, the nature of the data sources used, and the questions that lead the investigations. The development was conducted through the following cases:

Case 1: *DataRabbits*, which explores behaviour enabled through live data and automation.

Case 2: *Fatcat*, explores meaningful relationships and expression enabled through data-driven behaviour.

Case 3: *100 Working Mice*, explores the complexities of an online illustrated work, enabled through live data and automation.

In a concluding summary the main findings of the three studies are evaluated in the light of the *constellation of the four attributes* that I have already discussed as key to editorial illustration. I also note that each case is at once a place to explore specific attributes as well as aspects of a specific method of online editorial illustration.

In this practice led research the process and outcomes concentrate on questioning the viability of data driven illustration to address the challenges faced by illustration in an online context. I have not produced and do not present here, a fully operational (online) model; this would have meant extending the research into policies and complex technologies that define the online (editorial) platforms, something outside the remit of this research.

6.1 Data Driven Illustration

Data driven illustration is a method of illustration, where the illustration is created and/or activated through the use of datasets and live data streams and is expressed through behavioural, aesthetic and narrative possibilities that are inherent to online materiality¹. The illustrations are programmed to react to particular algorithmic instructions, and can be delivered in the form

1. As I have explored only visual expression coming from traditional illustration such as drawing, collage (including photographic elements and found materials) and vector-lines, I only discuss the visual expression, the image, instead of discussing the much wider possibilities of all multimedia

of a range of experiences.

What defines this method as *data driven* is its live link to various online data sources, and the capacity through algorithmic instructions to continuously mine, store, calculate and synthesize large quantities of data. Grasping this new dimension requires an understanding of both data and code as malleable material and meaningful actors, possessed of agency. What is of further importance is the understanding of data as the result of an editorial process of mining and analysis and as a textual form. In this I follow McKenzie's notion of textuality² where he presents materialised text as including:

‘verbal, oral or numeric data in the form of maps, prints, and music, of archives, recorded sound, of films, video and computer stored information, everything in fact from epigraphy to the latest form of discography.’ (1999 p.13)

This presents data as a materialised textual translation of a non-materialised text, which I call a story, a principle I described in chapter 3.

Yet data has no material presence itself, it is a hidden story, and needs to be materialised through another modality. The act of materialisation requires a process of decoding, where the written algorithms are constructed to decode and represent a second editorial process, a notion supported by Hayles (2003) who presents data files as: ‘performative by their very nature, independent of whatever imaginations and processes the user brings to them’ (2003 p.274). As for illustration, the creative process not only lies in the manifestation on the screen, but in the very act of selecting the data, the writing of the algorithm and the creation of its expressive form. At all of these moments there are semiotic and expressive processes that warrant narrational and creative decisions. In short, data can be both illustrated, like any other story, and illustrational, but has no form of its own.

The data selection process and the decoding of the data are editorial processes, where decisions are made as to which data is to be analysed and shown. The shaping of these processes, the questions that define the data selection processes and the type of answers that are sought, gives semiotic significance to the resulting outcomes. While data is not only calculable text, it is equally an indexical referent (Gitelman, 2013). The link to something outside itself is important as it creates a necessary proof that the illustration is in fact an illustration of an editorial story, a reflection on an ongoing concern in the world around us. Without in some way revealing this

2. In this light McKenzie describes the origin of the word text in relation to the materialisation of textuality: ‘The origins of text points to a primary sense, which defines a process of material construction. It creates an object, but it is not particular to any substance or any form. The idea that texts are written records on parchment or paper derives only from the secondary and metaphoric sense that the writing of words is like the weaving of threads.’ (1999, 13-14)

legitimising, indexical quality, the illustrated work might as well be fixed animation. It is the expression driven by live data input, controlled by the algorithmic interpretation, that makes the experience of the data driven illustration not only emergent, but also referential (Fry, 2008; Shiffman, 2008, 2012). What is in question is the level to which this indexical quality determines the illustrational within this illustrated work. In other words, where are the boundaries of believability if it's not the data itself that is being visualised? This is a question brought up through the practice research, and equally was discussed in the interviews with Sturt (Sturt, 2012 (interview)) and Diprose (Diprose, 2015 (interview)), the level of the believability was of utmost importance and particular to this method of illustration. It was understood as bound up with editorial illustration's notion of *editorial*, and its translation into data as editorial text, something I further explore throughout the three case studies in this chapter.

6.2 The Potential of Data Driven Illustration

I developed the following method of illustration seeking to utilise all the material possibilities open to online illustration, but perhaps more importantly, seeking to counteract the ubiquitous and seemingly uncritical popular use of data visualisation; for instance highlighting the aesthetic effects of data visualisation (McCandless, 2012), highlighting the sensationalist factoids³ that can be retrieved through data analysis (Levitt and Dubner, 2007) or the belief that visualisation is a quick fix tool to access knowledge (Illinsky, 2012). Where data visualisation has a role in creating insight in many practices, its inherent subjectivity is more often noted as problematic (Tufte, 1997; Reas, 2010), than an interesting and positive property to celebrate, not least because it is, by implication, denied (boyd and Crawford, 2012; Bassett, forthcoming 2015).

In data visualisation the pictograms or icons, even colour choice or width of chart lines, are always a human design decision, whose signifying properties can never be fully erased (Barthes, 1977).

A rare exception of an open promotion of the subjective use of the data and image relationship is Mesocosm (2012), an installation and website by Marina Zurkov (Zurkov, 2012). In this work, data driven animations emerge over time in a dystopian landscape, a never ending cycle responding to particular data sets and algorithms, able to show the seasons and passage of time throughout the day. However, her work presents itself within the discourse of fine art, and not within the realm of editorial communication, although I would argue that the work could easily migrate to an editorial context.

Over recent years, with enhanced access to data bases and enhanced

3. A factoid is an item of unreliable information that is reported and repeated so often that it becomes accepted as fact (Oxford dictionaries, 2014)

methods of data retrieval there is a growing interest in its analysis as a method of discovering stories, as well as combining these narratives with interactive graphics to reveal these stories, which Segel and Heer denote as *data stories* (2010). As all these data sources are opening up to discovery and explanation, with data driven illustration I present a method that can humanise the sometimes complex and abstract interpretations, providing an openly subjective view on apparently abstract social, economic processes

6.3 Testing

Each data driven illustration should be considered as a singular created experience in relation to distinct contexts and decoded by individual readers. Data-driven illustration is a method of illustration, which adheres to the same conditions of an editorial context and its implied readership (Kress and van Leeuwen, 2001, p.115). Whether the success of data-driven illustration, as a method of editorial illustration, can be measured, in terms of communicating its message and engaging its audience, is difficult to gauge. In other words, whether data-driven illustration is able to present the so-called preferred code (Hall, 1993) as is discussed in Chapter 3 p.55-56, is based on subjective observation.

However for research purposes, testing its potential, through discussion with experts in the field of illustration and data visualisation, can give useful insights. For that reason, the proof of concept *Fatcat* (Diprose only) and 100 Working Mice were discussed with Tobias Sturt and Andrew Diprose.

Sturt and Diprose are two expert art directors and designers, experienced in working in print and online editorial media and who commission and direct both data visualisation and illustration. Tobias Sturt is Design Manager of the *Guardian Digital Agency* and lead data visualisation. He is responsible for majority of data visualisation at the Guardian, which is popularly known for its quality and advanced level of data visualisation. (a transcript of the interview, see Volume 2, 5.2 Interview Tobias Sturt, p. 94-99). Andrew Diprose is Art Director of *WIRED* UK print and iPad edition, ever since it's first edition in 2008. *WIRED* is on the forefront of magazine design and as art director Diprose needs to consider the dual position of print and online editorial design and effectiveness of illustration within this publication. (a transcript of the interview, see Volume 2 5.3 Interview Andrew Diprose pp. 100-106, Volume 2 5.4 Interview Andrew Diprose 2 5.4, pp. 107-111)

Their expertise and experience offer informed perspectives on the role of illustration, data visualisation and the commonality and distinction between the two fields. Further they present a deep understanding of audience reception of the publications they work for, as well as the particular demands of new media technology.

Sturt and Diprose discussed the potential and the particular quality data-

driven illustration had to offer. In describing its independent but related position Sturt would define: 'It sits in that editorial illustration place, but in the same way that a political cartoon or a photo essay would sit'. ... 'This is kind of an article in itself.' Diprose equally hinted at its independent but related position: 'I imagine you can see [*100 Working Mice*] as a bonus aside to what is going on. Just so you know the state of the world in an easy to digest graphic, to supplement the news, rather than being the news'. Both Sturt and Diprose pointed at the dual nature of the work, where illustration and data visualisation were present. Diprose: 'This is in a way a data visualisation. But the way the characters move and the looseness of the line and the way you have drawn it, it is a lot more like a regular illustration that we would run in *WIRED* magazine. There is as much for its aesthetic properties as its intellectual properties'.

How this would be perceived Sturt commented: 'The audience reaction would be puzzling out what everything means in the visualisation, reading the tweets, than the realisation of real-time is probably the last thing the audience does. But what that means is that they might come back at lunch break to have another look and it becomes a living relationship between the audience and the data through the visualisation'. The real-time aspect forced a consideration how to maintain the relationship, as the work should be understood 'as creating a portal to a world that the audience goes on to explore'. Diprose pointed to the importance of believability. Where the knowledge that the illustration was 'backed up by facts', would enhance and extend the engagement.

Both Sturt and Diprose saw the potential use for this method of illustration, where Diprose could image forms of implementation that would aggregate other and smaller visualisations into a bigger illustrative statement. Sturt pointed to the growing use of data in journalism, which offers new types of storytelling and story perception, including a growing 'new' visual literacy that data visualization commanded. 'More and more there is an audience, a means and a language'. It no longer needs to sit in one place online. You no longer put things on a website and they stay there, it gets passed around'. In general the reception was positive and potential for this method of illustration was understood. Concerns were 'real-timeness' and the development of the story but also the sustained engagement. Also the need for a 'feeling of truth', a believability, a recognisable existence of 'real' and 'live' data. These concerns are all addressed in the development and analysis of the range of case studies.

6.4 Structure and Methods of Practice Research

This chapter thus explores the creation and outcomes of a series of practical case studies, each investigating the capabilities of a particular method of

online illustration; data driven illustration. The chapter is structured around three cases, consisting of two smaller studies that have culminated in a more advanced outcome: *100 Working Mice*. Each case focuses on different aspects of data driven illustration: aesthetic expression and signification come together to form a *data driven* illustrated work. The practice is informed by knowledge gathered and developed through theoretical research, and through the act of making (Bolt, 2007), as described in Chapter 1 (p.19), and through the tacit knowledge derived from my own practice; conversations, collaborations and mentoring from practitioners in the fields of illustration, data visualisation, programming and content development, along with input from individuals working with financial markets and theoretical knowledge, have all in various ways informed this research. As part of a particular method of practice-led research, the practice is not necessarily leading towards a *certain* outcome (Sullivan, 2009), rather knowledge gathered in the process and exploration builds towards proposed principles of application (Smith and Dean, 2009).

6.5 Practice Research Questions

The practice led research I undertook was led by the following questions:

Process and Outcome

- How is the process of creation affected by digital technologies, programming languages and data principles?
- What effect do data and programming have on the creative process of constructing the illustration?
- What effect do data and programming have on the expressive and semiotic qualities of the illustrated work, the illustration and story, and how does this influence its effectiveness?

Concept

- (How) does the data driven illustration express the four attributes of editorial illustration (Manifestation, Translation, Reflection and Engagement)
- Are there any modes of expression that are specific, unique or central to this method of editorial illustration?
- How does this influence its ability to induce deliberation?
- What kind of materialising and ideological context enables the understanding of data driven illustration?

Questions that lead process and outcome are addressed during the three cases outlined. The questions around concept are addressed in final summary of this chapter.

6.6 Open Data

All data used is so called *Open Data*, which refers to the availability of data, whereby the public is given free access to the data sets.

Finding data sets is becoming both easier as well as more complex. Where the (financial) value of data and products based on data-amalgamation and interpretation is becoming increasingly clear, interest and pressure is growing to give free access to data coming from public sources, alongside a growing desire to protect (personal) data.

Due to pressure, governments and public institutes are gradually opening up their data to public scrutiny. Institutes such as *The Open Data Institute*, *The Open Knowledge Foundation* or similar initiatives that are part of the wider *Open Source Movement* are catalysts for an emerging (but highly contested) open data culture (theodi.org). Furthermore commercial companies such as *Twitter*, *Google*, and *Yahoo* give limited access as they benefit commercially from the application of their information. Access to data most often takes the form of particular computer formats such as .csv or .pdf or the creation of an API⁴.

6.7 Programming Language

As part of the preparation and development for the data driven illustrations, I explored various software applications that could enable the creation of *online illustration*, starting with an exploration of *off the shelf* free software that gave easy access to interactive and online communication (Blogger, Wordpress, Facebook, Twitter, Apple Author). Crucial to the choice of program was not only its capacity to create images, but also an open program structure and design, which could facilitate, as far as possible, analysis of the variable and structural components of the creative process.

Furthermore, the *learning curve*, the process of learning the program to an adequate level, had to be reasonable given the time span and my own level of digital competence.

After consultation and a review of similar or related programming packages (*Flash*, *interactive PDF*, *Java*, *C++*, *HTML5*) I finally decided upon *Processing*⁵ (version 2.0) an open access programming software described as:

‘a programming language for teaching art and design students how to program and to give more technical students an easier way to work with graphics’ (Casey and Fry, 2010).

5. The goal of the Processing Foundation is to promote software literacy, particularly within the visual arts, and to promote visual literacy within technology. Our primary charge is to develop and distribute the Processing software, both the core Application Programming Interface (API) and the programming environment, the Processing Development Environment (PDE). The board of directors for the Processing Foundation consists of Ben Fry, Casey Reas, and Dan Shiffman (processing.org/foundation).6. processing.org/overview

It is a broadly applied programming language, with widely available instruction manuals and a large community of users⁶.

With no programming skills to start with, I enlisted the help of a training company, Codasign,⁷ and also Jayson Haebich (an interaction programmer specialising in Processing) who on a consultation basis helped to develop my skills to a *medium level*. The journey towards this encompassed individual tutorials, training books, seminars, online courses⁸, individual tutorials from other helpful coders and frequent use of the Processing website and the Processing Forum⁹, Processing wiki¹⁰, Processing Web¹¹ and general web enquiries. In the end, my level was still insufficient to create the majority of the more complex programs (some of *DataRabbits*, *DataZoo* and *100 Working Mice*) I wished to develop and they became a collaborative effort with Adam Stark (Codasign), Jayson Haebich and myself, where they translated some of the design instructions into code. Stark and Haebich, constructed the framework of the program, where expressive variables - where the expression of the illustration was most directly affected - would be determined by me, or based on my implicit instructions. What the collaboration further allowed me was to closely follow their work and process, as well as giving insight into how my creative instructions were translated into programming language - sometimes resulting in conflicting instructions, or impossible demands as well as some surprising results, thereby giving me insights into the nature of programming and the programmed image.

6.8 Technical Requirements

The resulting programmed illustrations are available on the accompanying usb drive. They require the installation of *Processing 2.0* or higher, connection to a *WIFI* network, and full colour computer monitors with a minimum screen size of 1024 x 768 pixels. Further instructions on how to open the program files are in the README text on the drive.

Alternatively a demonstration movie is also available on the drive, which gives some insight into its functionality. Further documentation on the process of development is available in the Volume 2 (pp.27-71).

7. codasign.com

8. lynda.com/Processing-training-tutorials/1402-0.html?category=beginner_337; lynda.com/Processing-training-tutorials/1402-0.html?category=intermediate_338

9. forum.processing.org

10. wiki.processing.org

11. github.com/processing/processing-web

6.9 Case 1 - DataRabbits

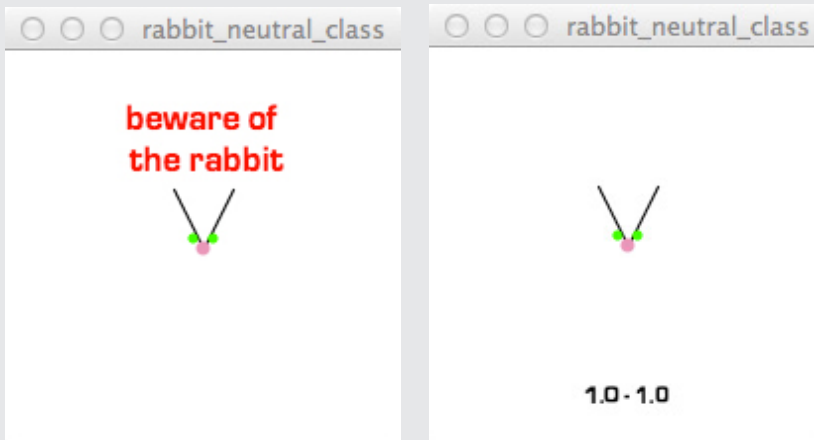


Figure 6-1: Nanette Hoogslag, *DataRabbits*- neutral rabbit with diagnostic text, 2014.

Figure 6-2: Nanette Hoogslag, *DataRabbits*- neutral rabbit with caption, 2013.

DataRabbits is an experiment with the expressive possibilities of data as material. It compares the visual expression of six different live code sources through a simple diagrammatic image of a rabbit's head.

In this study I describe the aim, the setup of the study, the generic form and shape and the six variants, the compilation and conclusion. More in-depth mapping of individual variants can be found in the Volume 2 (pp. 27-54).

Title: DataRabbits

Date: 2012-2014

Size (interface): 200 x 200 pixels and 500 x 500 pixels

Expressive method: Processing 2.0

Data sources: Selected data sources demonstrate properties such as volume, volatility, time-cycle, incrimination, speed, intervals and expressive variety.

news: feeds.bbci.co.uk/news/rss.xml

finance.yahoo.com for FTSE: Lloyds and Barclays;

weather and sunrise sunset: weather.yahooapis.com

twitter; time- based on computer internal clock and location setting

Main objective/ aim: The aim of this case study is an exploration of the possibilities of streaming data as an expressive agent.

6.9.1 Concept

In a series of visualisation exercises the properties of various live data structures are explored for their ability to present the aesthetics and dynamic expressions of a computer object, Additionally, the creative powers that reside within programming are examined to determine the qualities of this behaviour.

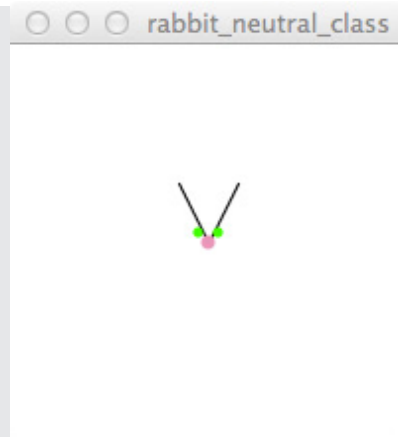


Figure 6-3: Nanette Hoogslag, *DataRabbits*- neutral rabbit the rabbit head object, 2014.

The *neutral rabbit* - the object that is not linked to any dynamic data is the basic shape for all objects. It is positioned in the centre of the image and consists of three fixed - static - elements and three dynamic elements. Fixed are:

a central pink ellipse (nose) and two green ellipses (eyes)

and three dynamic elements:

Head - (invisible in the above image), but consisting of ellipse with the diameter of 1 pixel, starting behind the pink ellipse. The dynamic potential is to change colour, size and outline.

Ears - two diagonal lines starting in the centre behind the nose and moving out and upwards. The line is 1 pixel wide and 45 pixels in length. The dynamic potential is to change colour and size.

Each data exercise presents a basic, symmetric form of ellipses and lines that can be described within the code and executed through the program. It represents a stylised shape of a *rabbit's head* (figure 6-3), which contains an inherent potential for figurative narrative. For the purpose of analysis some basic diagnostic numbers are visible, (figure 6-2) plus a key command; if pressed the caption *BEWARE OF THE (data source) RABBIT* appears (see figure 6-1).

In these sketches the expression of data as a visualising material depends on the type of information, its level of depth or detail: granularity, its quantity, its type of growth, its values and velocity.

A first step is to select and categorise this data and already, in the selection process, editorial or creative selection criteria and methods have been applied, choosing one source or data set over another, defining the search query, the quantities of sources, data sets and so on. The next step is writing a program that enables the data to be accessed, parsed and transcoded into numeric values that lend themselves to the varieties of mathematical treatment set by the algorithm.

In these exercises, one main data source is selected (such as BBC news categories or Yahoo weather data) and per source, two sets are selected (such as for BBC news: national or international news, or Yahoo weather: wind direction and wind speed). In a series of programming experiments the various dynamics were explored for their impact on the shape of the object. (see various sketches and data analysis in Volume 2, pp. 28-53)

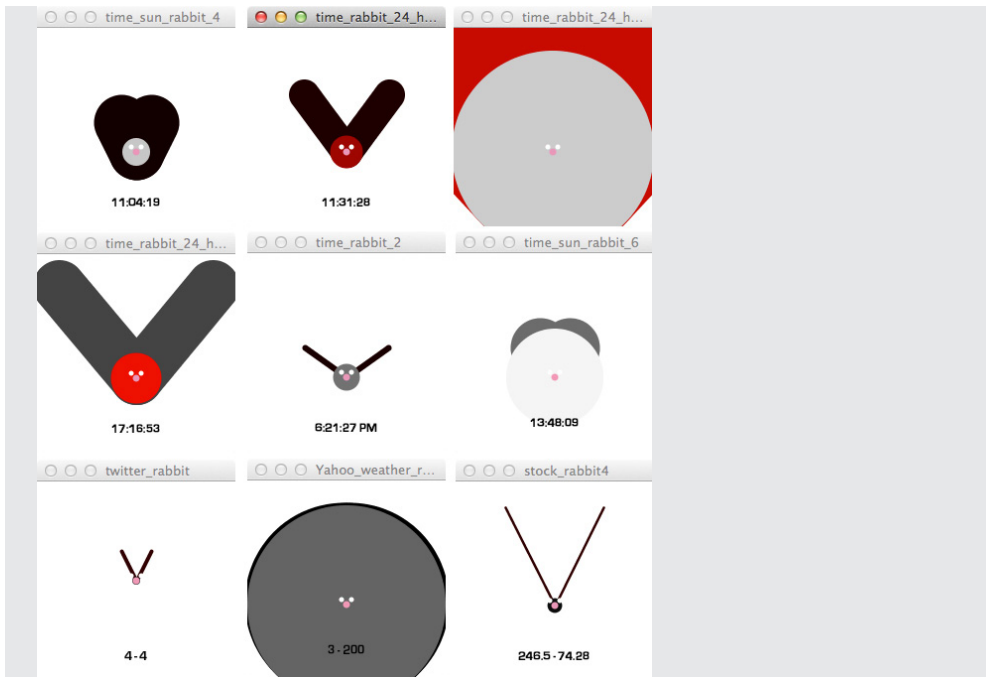


Figure 6-4: Nanette Hoogslag, *various DataRabbits*, 2013.

6.9.2 DataZoo: Putting DataRabbits Together

In a final exercise, *DataZoo*, in order to compare their behaviour, I mapped a selection of the programmed objects (*DataRabbits*) together, where each object represented one of the tested data sets (figure 6-5). In *DataZoo* the dynamics were applied to drive movement and shape.

Both *DataRabbits* and *DataZoo* present the basic principles of *data driven* narrative and provide insight into how data can enable changes in aesthetic expression and movement.

The behaviour of the data source is charted in some detail, including some conclusive findings about data driven illustration - these can be found in the Volume 2 (pp.27-54)

Figure 6-5: Nanette Hoogslag, *DataZoo*- various iterations, 2014.



6.9.3 DataRabbits Conclusion

Each data source and type of analysis evolves its own forms of behaviour, depending on variable levels of data output. Change can be relatively slow or small (BBC, weather, stock market,) or large or fast (milliseconds), erratic (Twitter, bus arrival) or changeable but predictable (sunset-sunrise), all of which depends on the search criteria. Twitter is able to release either very small or very large results, depending on the search criteria. Even though the data can be manipulated in many ways, at a basic level the manifestation always relates to the inherent patterns, and is composed of the movement of the data at the particular moment of release, plus a delay through the delivering channels; for instance Yahoo refreshes its stock market data every thirty seconds. This created an emerging narrative, predictable to a certain degree, yet equally reflecting the sender's transmission policies.

What these individual data exercises show is the diversity of dynamics that are available even within a single data set and that each method of finding, preparing and selecting data reveals different but stable patterns, intervals, rhythms and duration. Each data set has its own family of distinctive characteristics. In this way they can be understood as groups of patterns that can be employed for aesthetic and narrational expressions.

The emergent quality of live and automatically updated behaviour is distinct from traditional predetermined animation, but its value and potency only becomes apparent when the presence of data and its source are somehow revealed. In communicating the significance of the visual, this *liveness* has relevance; the question is how and to what degree does the source of the data need to be revealed to the reader?



Figure 6-6: Nanette Hoogslag, *Fatcat*, illustration, 2013.

This is explored in the following case studies.

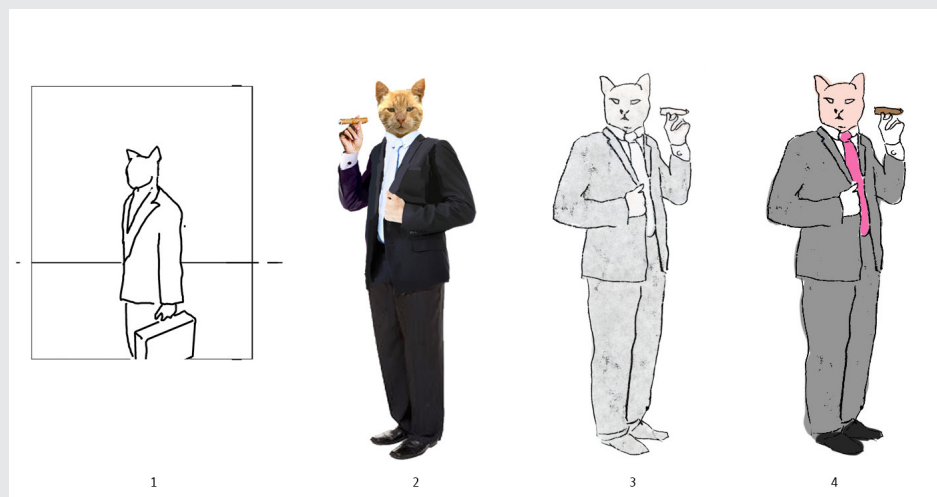


Figure 6-7: Nanette Hoogslag, *FatCat*, four stages of development, 2012-2013.

1. Initial sketch idea, 2. Photo collage 3. Outline 4. Coloured visual.

6.10 Case 2 - Fatcat

This case study concentrated on the potential of signification of data driven illustration, and how or whether this method can be applied in an editorial context. In this case, the illustration is a visual critique on the imbalance of wealth created through speculation in our present market driven financial system. This is represented through the growing and shrinking of the waistline of a fat cat.

Title: FatcatFTSE

Date: 29-11-2012/ 10-4-2014

Size: 800 x 600 pixels 72 DPI

Expressive methods: Processing 2.0, Photoshop 5.1, printer, block-print ink, digital photographic images.

Data Source: uk.finance.yahoo.com

Intended readership: *Guardian* readers

Intended editorial context: *Guardian* (The Guardian, 2008, 2013, 2014)

Editorial story: How the 1% got richer, while the 99% got poorer. (Wolff, 2010)

Main objective/ aim: The main objective is to explore the relation between aesthetics, signification and data driven automation.

6.10.1 Visual Concept and Illustration Elements

The selected article (Wolff, 2010) was chosen because of its clear ideological positioning and invitation to reflect on what is presented as a current and on-going gross imbalance in wealth due to speculation; money making money. Importantly its subject is presented as on-going with an inherent middle-aged man holding or smoking a thick cigar, representing a venal banker or a high earning executive or “captain of industry” (Fat cat (term), 2014. Wikipedia, the free encyclopedia).

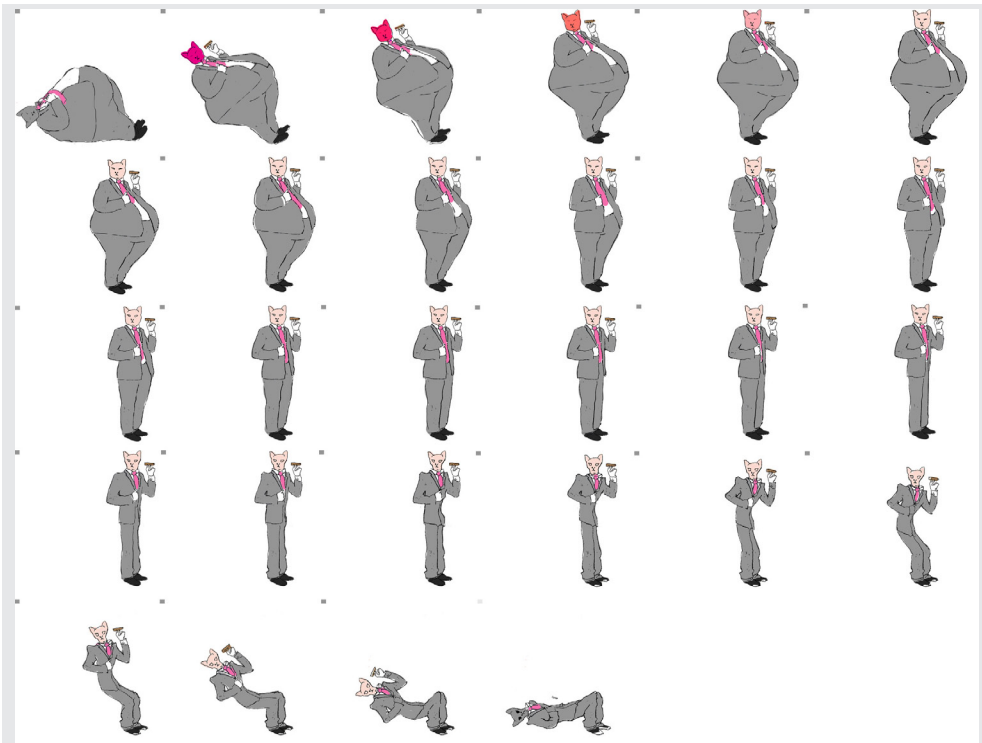


Figure 6-8: Nanette Hoogslag, *Fatcat*, all animated frames, 2013.

potential for change, plus a meaningful link to a live data-rich source, in this case the financial markets.

For the visual concept I used the metaphor of the *fat cat*. Fat cat is slang for a rich, powerful person of possibly *undeserved* wealth¹² where the belly, the physical expression of opulence, could grow or shrink depending on the status of the present market system; this holds the potential for a satirical representation of conflict between the self-satisfaction of the cat's demeanour and its clearly unhealthy physical state. I translated the idea of the fat cat into a drawing, based on tracing a collage. (figure 6-7).

Then, for the animation, in every frame the outlines were slightly altered and manipulated to get the desired sequence of shapes. (figure 6-8). The sequence shows the changing size of the belly leading to two extremes - the minimum: frame 0, death by starvation or maximum: frame 27, death through morbid obesity.

The status of the market is represented by the FTSE share index. This is the index of the top one hundred companies listed on the London Stock Exchange. It is widely understood as the indicator of economic health in present market driven financial systems. Its daily activity is the live measurement of the FTSE index in positive or negative increments. These are relatively small percentage points, compared to overall growth since the index began¹³.

To visualise a fluctuating notion of growth, I sought a visual metaphor

13. In the spring of 2014 the FTSE Index reached over 7000 points.

14. There is no activity outside trading hours (between 08.00 and 16.30 GMT), in weekends, on public and bank holidays.

15. In this case Yahoo has a 30 second delay

where growth can fluctuate and is not always positive. I used the ballooning belly of the cat, since obesity is a visible indicator of a serious (self-inflicted) health issue. In other words: If the FTSE Index goes up, the cat gets fatter, if it goes down, the cat slims down. By connecting the waistline to live market data, the growing and shrinking becomes a live event, and the reader can witness the movement towards or away from a healthy weight. As the FTSE is the result of human behaviour, the *FatCat* illustration presents not something inevitable, but a human trait, something we should be able to *do* something about.

6.10.2 The Experience of the Data Driven Illustration

A data set that responds to the movement of the stock-markets is the central driver of this automated animation. This results in a slow reactive movement, on one level unpredictable, but equally set in a fixed cycle that echoes stock market trading hours¹⁴. The settings of the program plus the automated delay in providing the data¹⁵ affect the results. The rate of data change is relatively slow, it might take minutes for the state of the *Fatcat* to change visibly and significant change might only be notable over the duration of a day or days, depending on stock market movements. To attract attention to the fact that the illustration is not a still image, but a live animation, I experimented with the number of frames and the subtlety of change between them. In this case subtlety only diminishes the visibility of change, it is the jump between animated frames that attracts attention, a sense of a visual jolt.

In these exercises I explored two options, one based on animated frames, where the upper and lower limit is set, or the interval rate between frames is hardcoded¹⁶ and another option, only in concept, where the size of the belly is based on a computational vector line. The second option was in response to a structural and conceptual flaw that came to light in the frame-based version where it was not able to represent the measurements over time properly.

Firstly the amount of animation frames proved to be too limited - the market value was continually shifting, which forced a continual adjustment of the parameters in the code, or required a wider range of frames, impacting on the visibility of change. But further it revealed a conceptual issue, where the FTSE does not present a maximum, but the frames of the fat cat did (death by over eating). To use the sequence of frames required ideological positioning, either to establish a final state - which is an

16. hard-coded: 'a data value or behaviour written directly into a program, possibly in multiple places, where it cannot be easily modified.' (Foldoc.org)

17. A vector line is a line or movement defined by its end points, or by the current position and one other point (Foldoc.org). The shape of the line is automatically recalculated and rendered, which means it does not lose its image resolution - visual quality.



Top figure 6-9a: Nanette Hoogslag, *Fatcat*, image without any reference, 2014.

Bottom figure 6-9b: Nanette Hoogslag, *Fatcat*, image with reference, 2014.

ideological statement on the finality of the market system - or somehow the belly of the cat needs to be able to keep growing. But then, how do you visualise a limitless waistline?

These questions led to a second concept; what if the waistline is recalculated and drawn as a vector line¹⁷, which can be programmed to infinitely grow, which also solves the issue of creating an infinite number of frames. Here the limit would be the frame of the image, but this could also grow infinitely, which could be captured in a scrollbar, that would equally grow. Growth would be represented through the image of the cat and the signification system of the interface itself. The act of scrolling would actively involve the reader in the creation of meaning.

6.10.3 Data Driven Experience; the Relation between Illustration and Story

The study of the *FatCat* is constructed as an illustrated work, where story and illustration are both present but interwoven (Chapter 5 p.78). The story is represented through the data that drives the changing states of the cat, whilst the illustration is the expression of these states in the figure of the cat. The difficulty here is to make clear that the expression of the cat is linked to a story and both of these are expressed through the emerging data, which points to a source outside the illustration itself.

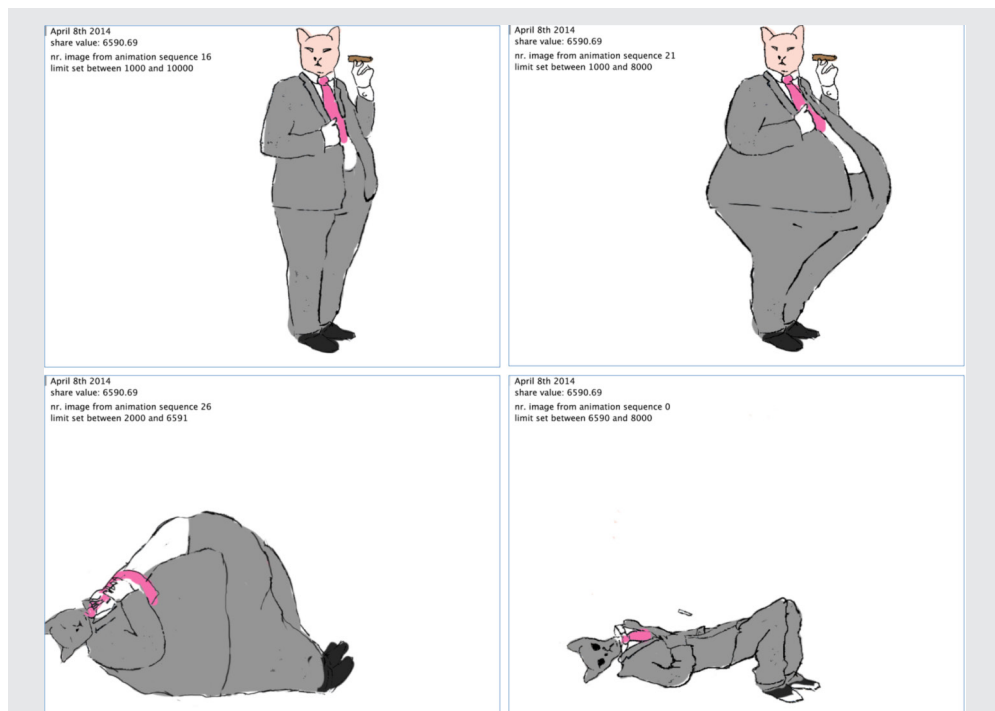


Figure 6-10: Nanette Hoogslag, *Fatcat*, four interpretation, 2014.

The program presents four different interpretations of the same data - note the same date and same stock value.

Without any references, this illustrated work does not easily signify a story beyond what can be seen.

When the data is revealed adjacent to the illustration, even in the form of the informational text I used to study behavioural patterns, the text immediately starts to direct the reading. Even though I could argue that the story and illustration are there, interwoven and functioning as expected, in order to reveal the data story it must be 'signposted'. Whether this should be through numbers and words, or whether there are other modes of signification, needs further investigation, which leads to the next case.

6.10.4 The Representation of the Ideological Position

The automation of the illustrated work makes sure that the image constantly reflects an updated present state. If the cat is underweight or overweight, this indicates a negative state of the markets in relation to the 'healthy' trim looking cat. The experience is that of a permanent measurable now, where it displays, as it were, the present state of the ideological position. It brings up the question on how to mark ideological significant moments, not only the maximum or minimum (death), but also the *healthy* state, when reality matches the ideal state.

Providing the technology is not broken, this data driven illustration could

18. A news story is said to have a shelf life of 36 hours on average, but with each story being an investment by the editors and authors, there are also thought around reinvigorating interest after stories lost their news value (Cohen, N., 2006. News Online Seems to Have Long Shelf Life. The New York Times.)

be viewable at any time in the future. As the editorial illustration responds to an ideological position, it brings up a question of the currency of ideology itself. How long can or should an editorial illustration signify a particular interpretation, a preferred reading (Hall, 1993)? Where the newspaper provides an automatic time stamp to the editorial illustration, online this contextualisation is not automatically provided through the publishing context. It brings up questions around what I call shelf-life, how long could or should an illustration remain valid?

The role of the illustration is to reflect a particular cultural and temporal significance (Chapter 3 p.59) and for its significance of be readable by the intended audience it needs to be understood through its semiotic coding, which is fixed in the same temporal and cultural location. This is a phenomenon noted by Walter Benjamin as *afterlife*, the changed significance of a text over time (Benjamin, 1992). Editorial illustration, illustrating a story and its ideological message with unending relevance would, I argue, be impossible, unless the ideological and social coding within the illustrated work is automatically updated, which as pointed out in Chapter 4, requires complex algorithms not yet in existence (Joshi et al, 2011). To require a single editorial illustration, created at one point in time, to be *continuously* valid repudiates its attributes of reflection (Chapter 3 p.54). Moreover it is perhaps unrealistic in terms of audience interest, as in general the moment of engagement for online publications is at its highest intensity around the time of publication (Cohen, N., 2006.)¹⁸. The duration of relevance, its *shelf life*, might be best guided by the producer's own notions of contemporaneous relevance and the ability to update or time-stamp the illustration.

6.10.5 FatCat Conclusions

Following on from the conclusions of the *DataRabbit* case-study, focusing on the aesthetic behavioural aspects, *FatCat* explores the signifying abilities of data driven illustration. For this purpose the study presents an illustrated work depicting a story within an ideological context, chosen to allow expressive and signifying visual aesthetics and data driven behaviour. The *FatCat* case study provoked a range of questions, which pointed to issues around changing modalities signifying a shift in register, the need to reveal the data story and the validity of the ideological setting in a context that gives no particular durational time frame. These are all notions tied up with the particular aspects of data driven illustration and the capabilities of the attributes of editorial illustration to be realised.

Automation can give the image the possibility to continually create a reflection of the story's intent set against a range of conditions. But creating for automation brings with it issues of media specificity linked to particular material expressions and visual metaphors, that are in turn tied to particular

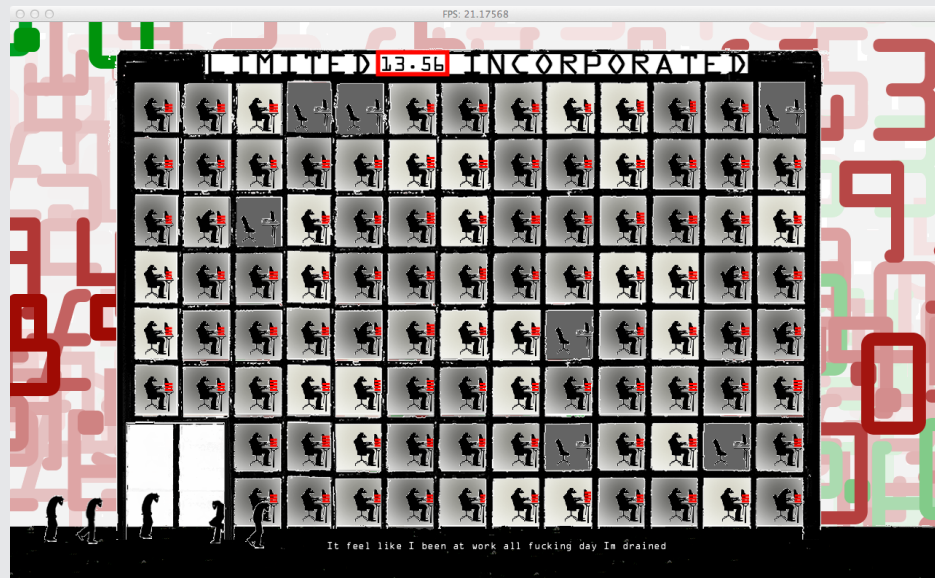


Figure 6-11: Nanette Hoogslag, *100 Working Mice*, daytime, 2014.

materialities.

Story and illustration emerge through the same channels, but though conceptually this is possible, it does pose a question of signification, if the story is hidden within the illustration and is not marked sufficiently clearly. Revealing the data story through, for example, adjacent written informational components, is one way of solving this problem, but this directs the illustration towards the position of visualisation of a written text, with the risk of reducing its ability to enable deliberation. The question is whether there are other, less informational ways, to indicate the data story's indexical position. The 'lack of scale', is equally remarked by Andrew Diprose in reflecting on this particular work (see Volume 2, p.100)

The concept of data driven illustration is built on its emergent and real-time presence. Providing the technology remains viable, a data driven illustration should be viewable any time in the future. However this flags up the issue of currency that needs to be addressed on a conceptual and ideological level.

The case study of the *FatCat*, as it is presented here, falls short in its ability to materialise, signify and reflect the ideological position in the long term. However, through addressing the issues, the study points out the potential of data driven illustration. It requires a further consideration of the particular stories that could be illustrated, of the setting of the ideological context and of the use of the materials and technologies to be applied.

What remains robust is the ability for data to drive the illustration, which has significant potential for editorial illustration, not least because the data refers to the most updated condition of a situation or event.

6.11 Case 3 - 100 Working Mice

The aim of the next and final case study was to create a proof of concept through the creation and exploration of a more complex data driven illustration, taking into account the previous findings.

This illustrated work is a visual commentary on the work-life (im)balance and presents the mechanical daily routine of an office through the automated actions of anthropomorphic characters, *WorkerMice* and *CleanerMice*; these actions are based on real-time data originating from various sources such as Office of National Statistics, Weather stations and Twitter. The investigation examines the possibility for editorial illustration to be created through automated and continuous narratives driven by live data input.

6.11.1 Concept

As described in the introduction of this case study in Chapter 5, this illustrated work questions the sustainability of the present work-life balance and work ethos of increasingly depersonalised working systems, presenting overtime and low-pay in an *enslavement loop*, based on a publication by the NEF (Coote and Franklin, 2013).

This subject is chosen because of the clear ideological positioning, which is prevalent in the book and its publishing context. The subject is currently widely debated (Korry, 2013; Crush, 2011; BBC, 2013) and has an ongoing status with many economic and social measuring systems providing a data-rich background, such as Office for National Statistics, OECD-Better Life Index, FTSE Index, YouGov or Google Public Data²⁰.

Title: 100 Working Mice

Date: 29-11-2012/ 1-9-2014

Size: 1024 x 768 pixels

Expressive methods: collage, Photoshop 5.1, Processing 2.0.

Data Sources: ons.gov.uk

morningstar.co.uk/uk/equities/indexstockprices.aspx?index=FTSE_100

[download.finance.yahoo.com/d/quotes.csv?s=%5EFTSE&f=sl1d1t1c1ohgv&e=.](http://download.finance.yahoo.com/d/quotes.csv?s=%5EFTSE&f=sl1d1t1c1ohgv&e=)

20. Office for National Statistics: ons.gov.uk; OECD Better Life Index: oecdbetterlifeindex.org; FTSE 100 Index: uk.finance.yahoo.com; Yougov: yougov.co.uk; Google Data: google.co.uk/publicdata/directory

21. Their ideological positioning they describe as: 'Our purpose is to bring about a Great Transition – to transform the economy so that it works for people and the planet. The UK and most of the world's economies are increasingly unsustainable, unfair and unstable. It is not even making us any happier – many of the richest countries in the world do not have the highest well-being. From climate change to the financial crisis it is clear the current economic system is not fit for purpose. We need a Great Transition to a new economics that can deliver for people and the planet. We do this through High quality, ground-breaking research that shows what is wrong with the current economy and how it can be better. Demonstrating the power of our ideas by putting them into action' (NEF, about).

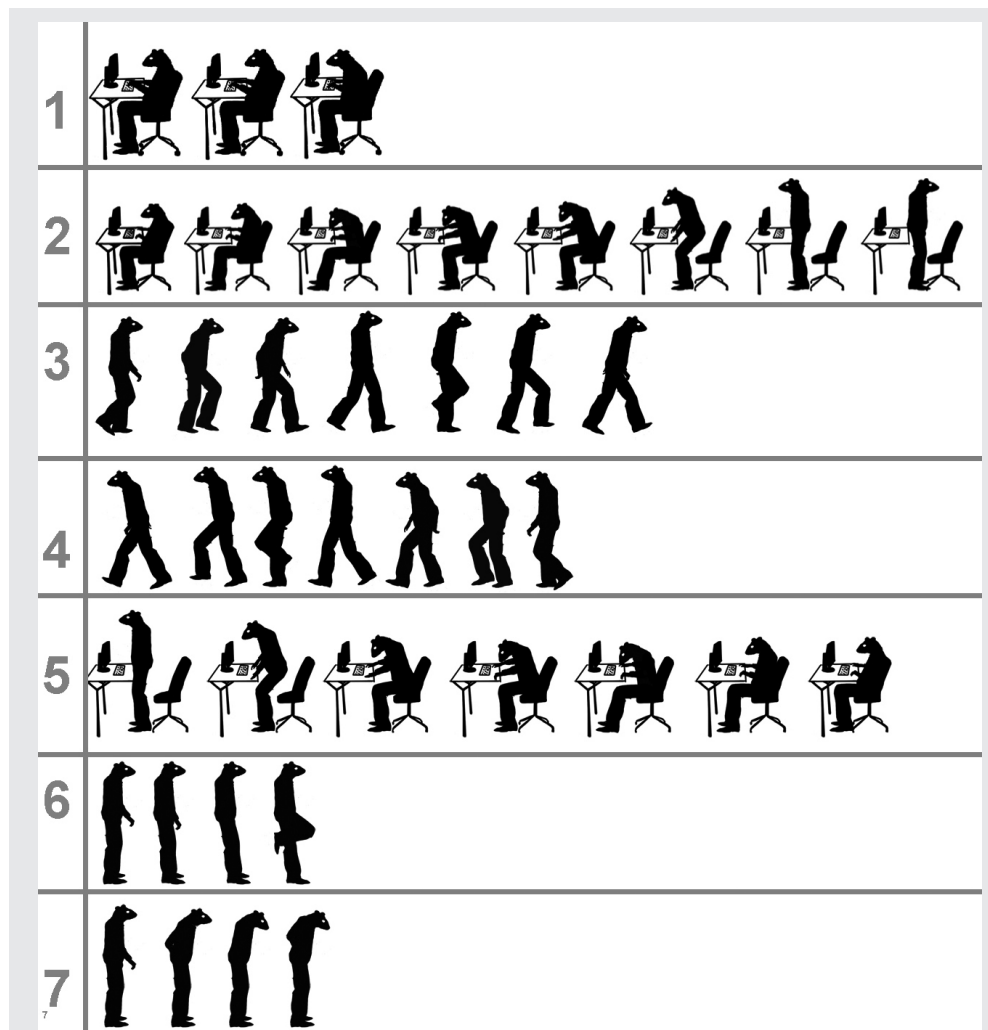


Figure 6-12: Nanette Hoogslag, *100 Working Mice*, all movement of workerMouse and unemployedMouse, 2014.

csv

ons.gov.uk/ons/rel/lmac/sickness-absence-in-the-labour-market/2014/sty-sickness-absence.html

weather and sunrise sunset: weather.yahooapis.com

Twitter;

statisticbrain.com/stress-statistics

Editorial story: Time on Our Side; Why we all need a shorter working week, by Anna Coote and Janet Franklin, 2013.

Intended readership: audiences reached through the network of The New Economic Foundation.

Intended editorial context: the online communication channels of The New Economic Foundation (NEF). NEF is a British, independent, socio-economical think tank. Their aim is to research ways to create a different social-economic model 'promoting social, economic and environmental justice' (NEF, about)²¹. They regularly publish books, brochures and have a well maintained website with various levels of content (from short on site information and links through to downloadable extended documents and reports) as well as partaking in consultancy, conferences and promotional events.

Main objective/ aim: create a proof of concept of online editorial illustration by the method of data driven illustration, through the creation and exploration of a more complex model. As in the previous case the intended editorial context is hypothetical.

6.11.2 Visual Concept and Illustration Elements

The illustrated work incorporated findings based on the need to consider particular patterns and limitations of existing visual metaphors. After much experimentation I eventually decided to illustrate the story through the real-time representation of the daily routine of an imaginary office, filled with anthropomorphic mice characters, whose actions are driven by statistical and real-time data, originating from various socio-economic sources and social media. The office, with its capacity to accommodate a hundred workers, is a metaphor for the labour market, whereby a full house of office workers, working only between nine and five and finishing their stack of work, represents full and fair employment. The illustration consists of a daytime shift (nine am to five pm) (figure 6-13), where WorkerMice work at their desks and attempt to get through a pile of red files before the end of the day, and a night shift, (nine pm to five am) when CleanerMice come in and clean the office (figure 6-14). All the while, the changing values of the FTSE index continuously cloud the sky in red and green numbers.

Factors such as overtime, unemployment and illness disturb this basic pattern. During the day Unemployed Mice live on the street in front of the office, whilst sick mice leave empty desks; and overtime brings in WorkerMice for either late and early shifts, or they work on weekends and bank holidays.

The aesthetic visual expression is based on my own mark-making style adapted to incorporate the requirements of animation and automation, which influenced the choice and complexity of the configuration. The range of expressions were directed by practical reasons (time, experience, costs and aim), requirements of automation (file size and total size of the program, programmability) and presentation (screen size and resolution). But these limitations at the same time offered an aesthetic that actually accentuated notions of crudeness, mechanisation and repetition (see Volume 2 pp. 56-70).

6.11.3 The Experience of 100 Working Mice

The image is in constant flux. On the one hand it contains programmed animated loops, for instance the typing *WorkerMice*; on the other hand, data driven actions and behaviour continually change their appearance.

22 . Twitter text is often employed as a sign of instant popular endorsement, seen in contests and other real-time event shows on television, or on websites where Twitter quotes feature as samplers of the community voice.

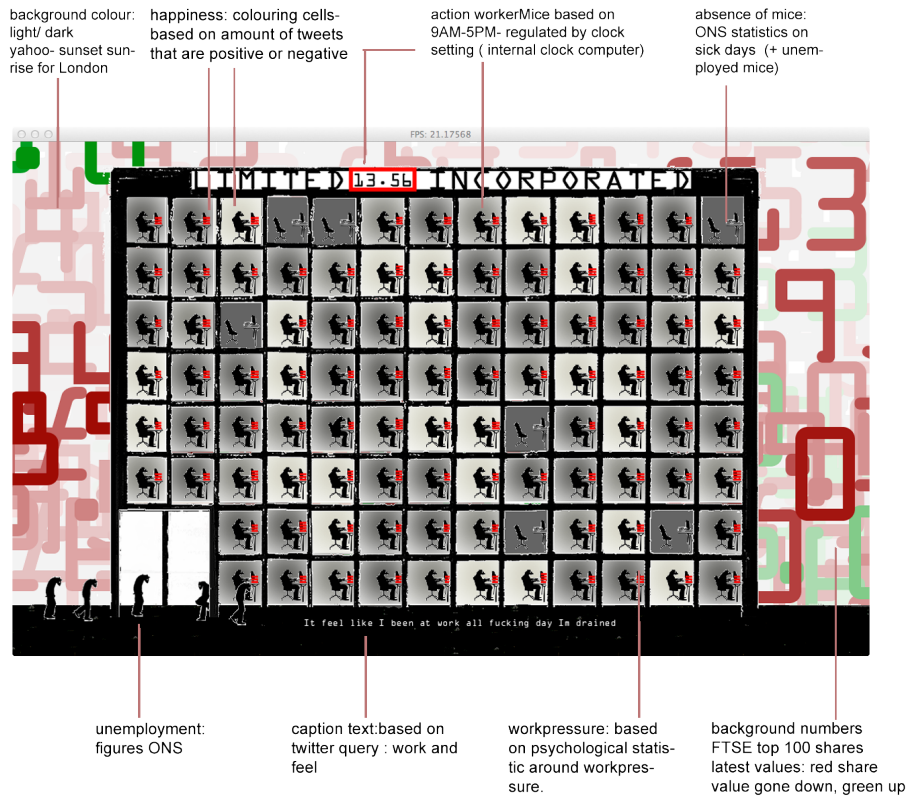


Figure 6-13: Nanette Hoogslag, *100 Working Mice*, daytime- behaviour activated through data, 2014.

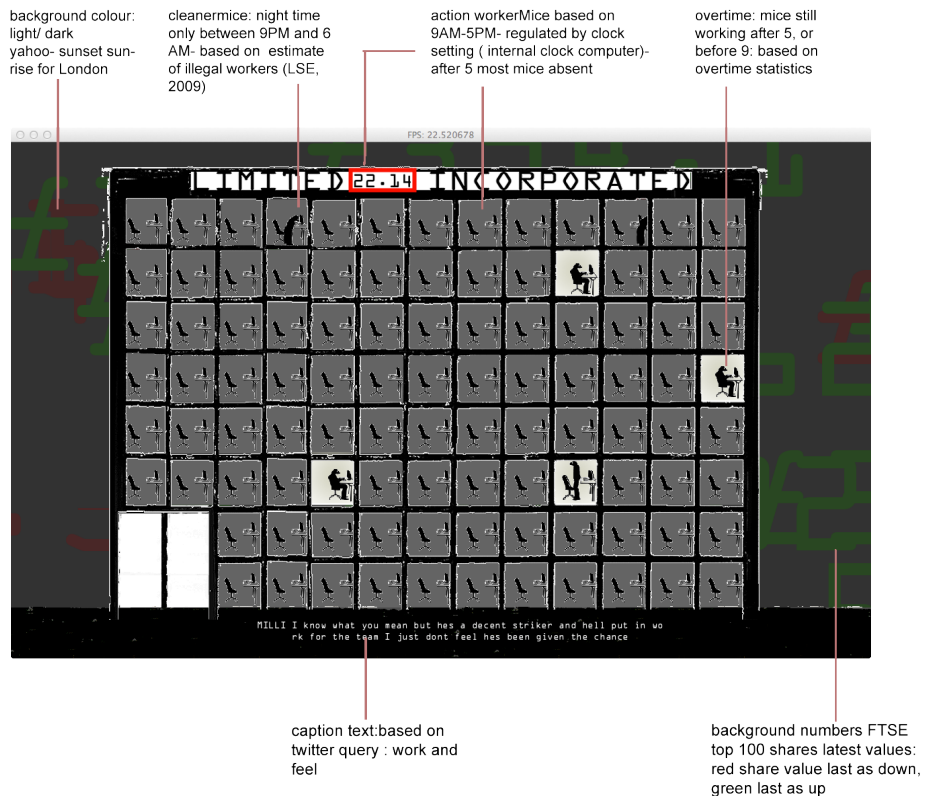


Figure 6-14: Nanette Hoogslag, *100 Working Mice*, nighttime- behaviour activated through data 2014.

Change will be notable when revisiting the illustration at different moments throughout the day or year; there will be moments of volatility or sudden changes in behaviour, for instance at the start of a working day or when significant new data is published.

Even though the main data set, based on labour statistics (ONS, 2010), is relatively stable and slow changing, the data's implementation, over time, on a series of a hundred objects can make for a more random distribution of the averages, which makes for interesting daily differentiations. For the reader to witness random moments through differentiations can be coincidental or could be programmed as a set event, comparable to viewing animals in the zoo, where their actions are to a certain extent unpredictable, but events are created through set feeding times and so on. Furthermore it harbours the potential (not implemented) for unique unpredictable incidents, based on statistics, such as death at work or bankruptcy and so on.

There is no written indication that the image is based on (live) data. But as I extensively described in Chapter 5 (p.103), this illustrated work employs various mechanisms to establish explicit and verifiable connections to the real world outside the experience of the work itself. For instance elements like the real-time clock, the background presenting day or night, the nine-to-five rhythm, are all indicators of its relationship to the present. Additionally, the text creates a continually updated emotive commentary, coming from the shared sensibilities of an anonymous human community²². It is an instant updated *caption* that frames the illustration (Barthes, 1977c). Whether the Twitter text is positive or negative, either way it supports the editorial ideology and the image becomes the illustration of a continually updating Twitter caption.

The illustrated work uses data not only to drive the action but also to signify the story and meaning, and this might mean seeking other data sources, or adjusting the methods of data analysis. In *data visualisation* the visual is adapted to signify the data, or as Dimitri Nieuwenhuizen (founder of LUSTlab, a Dutch research and development organisation for data and visual communication media) puts it:

‘As designers we seek to create a form inside which the data visualisation can grow, as designers we serve this emergent process of data.’

(Nieuwenhuizen, 2012 (interview))

But for data driven illustration it is not the data set itself that is of interest, but that which the data translates, the questions behind. For data driven illustration the search is for data sets that contain both the right material and semiotic properties. This could be compared to looking for a different

23. Selection based on text and linguistics requires knowledge of the semiotic and cultural structures of text, as well as understanding the particularities of Twitter usage. This requires a sophisticated linguistic algorithm (Wibberley, n.d.).

piece of photographic material to fit a collage, where both texture and meaning, as well as the indexical, are important. This adds a level of complexity that demands finding alternative ways to interpret data sets. It also envisages an alternative approach to selecting indicators, for instance the sale of popcorn as an indicator of economic downturn. (Boesler and Perlberg, 2013). Data mining and data analysis, already part of the editorial process, have now become part of the creative process of data driven illustration.

This editorial and creative manipulation of data is most clear in the creation of the Twitter stream, where both the selection criteria of the tweets, based on the presence of the words *feel* and *work*, and the *cleaning* and categorisation of the results with positive and negative connotations, are man-made decision²³.

Though programming is on one level meant to produce predictable outcomes, it is equally prone to unexpected turns, the *glitches*, that can deliver surprising and illuminating results. For instance the rhythm of typing of the *WorkerMice* has a slight time delay between each mouse, creating a sense of asynchronicity, and emphasising the notion of the mice as individuals as well as creating constantly changing rhythmic patterns.

6.11.4 100 Working Mice Conclusions

Through the case study *100 Working Mice* I examine whether data driven illustration can be a method of online editorial illustration. To this end I investigate and discuss the process and creation of this work as a *fully formed* data driven illustration. The investigation addresses the issues raised in the previous case studies, as well as looking at those that emerge through the new creative process. Taking this particular work into consideration, in the light of the four attributes that I claim constitute editorial illustration, I briefly review whether it is able to embody the necessary attributes: manifestation, translation, reflection and engagement and ultimately if it can create deliberation.

100 Working Mice can only manifest itself through online technologies, and for this it uses traditional, digital and online native material and technologies. *100 Working Mice* uses a multimodal structure of translation, where the illustration points to the story. The story in this case has a hidden textuality, which expresses itself through the illustrational story. Signification is enabled through visual and behavioural elements that anchor it to realtime, real life experiences within the everyday context of the work. Through this framework of signification the ideological message can shine through, allowing the position of the publisher and the gist of the story to be represented. Expressive mark-making reveals the presence of a particular style and approach, suggesting an individual maker. Engagement is initially created through the attention grabbing, flashing numbers,

through the coded visuals and on to the expected and unexpected behaviours in relation to a real world context, pointing to recognisable tropes of urban office life as well as to the empathetic community of tweets.

As to whether it invites deliberation, Tobias Sturt, (manager of the *Guardian Digital Agency*, data visualisation for the *Guardian*) in response to the final case study, *100 Working Mice*, points to the ability to create deliberation two ways, in the direct encounter and reflection on the work, and the possibility for a relationship created over time. (Sturt, 2012 (interview))

As the work is a proof of concept and not visible to the public, how the work would be received is speculative, but based on the usage of the examples *Test Tube*, *Best Amendment* or *Obama Hope* I would suggest that this kind of work could become a focus of deliberation, not just on the direct story it represents, but for related issues that are touched on. For this, online networks offer structured and unstructured channels, such as dedicated social media pages or Twitter channels.

In terms of its duration, how long this work remains valid could depend on the way the work is disseminated. It might be afforded a single viewing, like a still illustration, where instant meaning could be taken, or it could establish a longer-term relationship, one in which the reader is able to engage over time and explore changes.

Significant moments, such as the release of new data or an update of the original report, or related events, can create renewed validity and urgency to the work, and this update can itself become a news-worthy media event.

100 Working Mice needs to be *lived with* and therefore its placement needs to be considered, from the perspective of an infinite variety of possibilities from mobile personal devices, through to urban screen locations suggesting hybridised illustration-story relationships extending beyond the frame and into the surrounding urban context.

The realisation of these case studies and the creative process, particularly the programming, have proven to be exponentially more complex than programming a single object. Where the coding of each image element is relatively simple, complexity comes from bringing multiple objects and multiple data sources together. The creation of this illustration, in effect the creation of a data based program, requires a range of skills; in visualisation based on traditional illustration disciplines such as drawing and animation, in editorial skills based on visual storytelling, requires skills in data analysis, programming, networks and platforms. In this particular work the creative process has become dispersed over all the areas described above.

6.12 The Possibilities for Data Driven Illustration

What *Fatcat* suggested and *100 Working Mice* demonstrated is that data

driven illustration is able to produce viable forms of editorial illustration, in the sense that they satisfy the criteria I developed in this thesis, based on the constellation of the four attributes of editorial illustration. Data driven illustration is a particular form of illustration, activated through online materialities, and dependent on the material and semiotic application of data streams. Where the quality and presence of these data streams need to be acknowledged in terms of their additional ‘believability’. As Andrew Diprose (art director of *WIRED* magazine and tablet edition) remarked was

‘the lines could be loose and the form can be loose and friendly and illustrative, a long way away from data visualisation, with its squares and circles, but if there is not a relationship to something truthful, than the reader won’t be engaged’. (Diprose, 2015 (interview))

The expression of the hidden story, through data, but materialised through the visual, needs to be carefully considered. Whereas in other forms of online illustrated work, the story is expressed in a different mode from the illustration, here the subtleties of two distinctive modes can be overlooked, where the data is expressed through behaviours. Where the role of editorial illustration is to initiate deliberation, the story that is to be illustrated needs to be present and noted. This requires careful consideration of how to implement this method and what the context of the illustrated work can offer in terms of ideological signification.

Data driven illustration presents an approach to data mining and data analysis, where material properties, indexicality and semiosis define its use. This shows data to be not as what is illustrated, but a textual translation of a larger story concept, revealing data to be a flexible and subjective material.

But in what kind of context could such method of illustration be of interest? In the same interview Diprose suggested:

‘I imagine you can see [*100 Working Mice*] as a bonus aside to what is going on. Just so you know the state of the world in an easy to digest graphic, to supplement the news, rather than being the news’. (Diprose, 2015 (interview))

Within editorial media there are many stories supported by data and its visualisation, particularly within socio economic areas, and in areas such as infrastructure and environment. A small sample test of scanning the *Guardian* online edition²⁴ yielded four different stories that showed a potential for data driven illustration; they all displayed a reflective stance,

24. *Guardian* online edition on the 8th of January 2014 brought the following stories that would have been suitable subjects for the application of the method of data driven illustration: Griffiths, J., 2014. *Why green is good for you. The Guardian.*; Hatherley, O., 2014. *If we don't want to live in shoeboxes, we need to bring back housing standards. The Guardian.*; Rankin, J., 2014. *FTSE 100 "fatcats" paid average annual salary for three days' work. The Guardian.*; Simms, A., 2014. *The only sober way to run Britain's economy is to learn our limits. The Guardian.*

they all displayed ongoing concerns and they all referred to potential data sources that could be employed. An institute such as the New Economic Foundation, which reflects on social and economic movements, and wishes to communicate its findings to a broader audience, could also benefit from this method of illustration, as it is an organisation that not only seeks to argue its case through evidence, but also, like illustration, seeks to establish a dialogical relationship.

The creation of these illustrations involved specialist knowledge on all levels, from knowing and accessing the data sources, through to programming and creation of visual expression. The process of development required the application of logical- mathematical thinking, contained areas of associative and subjective exploration and areas of exploratory expression in visual and other materials and technologies. The skillsets come from very different disciplines and are often based on different notions of the application of their knowledge. For instance *FatCat* required understanding the workings of the stock market and data analysis, but not for financial goals, but to experiment with, in terms of visual expression. It required programming knowledge when working with programmatic structures, but equally the use of iterative, *messy* thinking and making developed through my own illustration practice.

Practical online implementation of data driven illustration is as yet not possible, through the technologies explored. There are issues related to parsing live data streams continuously, issues within the programming software aligning the use of externally developed code-structures, so called libraries, with the ability to create an independently running program, called a Java applet. Equally the running of these types of programs can often be hindered by the virus protection software installed on individual computers. The possibilities for achieving online implementation of data driven illustration, as online illustrated works, requires further research.

7 Conclusion

This thesis began with the question about what the advent of the Internet, as a ubiquitous media form, meant for the practice of editorial illustration, and what, if any, new forms of illustration could develop from a publishing world that was being forced to reinvent itself online. This transition or rather, rupture from the world of print to online media, has created a crisis for the editorial publishing industry including illustration, and raised questions about the validity of editorial illustration, my field of professional practice for the last twenty-five years.

To answer these questions I began by exploring how illustration performed within editorial news publishing, in print and online, and included current emergence of digitally native practices of editorial storytelling. But contemporary illustration is yet to emerge as a fully-fledged research area and scholarly analysis of the work performed by editorial illustration - particularly towards new media developments, has so far and to my knowledge, been absent. This meant that in order to make a serious study of editorial illustration, I had to develop a theoretical framework from scratch.

The framework I constructed reflected in part my practical understanding as an experienced editorial illustrator, where I use materials, their properties and expressive power to create meaningful pictures that are designed to be read as part of an illustrated article, within a printed publication. For an illustrator, a theoretical approach based on the relationship between the underlying structures of the field, was logical, as it reflected the intricate and complex relationships between the material, the semiotic and the social structures. Here the starting point was to first seek to understand editorial illustration's traditional and still prevalent print form and then follow the *logic* of a new understanding towards online expression based on a process of intermediation.

The wider epistemological foundations of this project are based on Actor Network Theory (ANT) (Latour, 1998, 2005; Harman, 2005; Law, 1999) whose value to me lay in the manner in which it maps relationships between a material, social and semiotic objects and agencies. It provided the methodological framework from which to understand the particularities of these interactions. This enabled me to bring together different areas of study and also to allow insight and understanding to emerge from practice, through my own work and practical research, along with discussions with practitioners (see interview list), and popular literature (Crow, 2010; Heller and Chwast, 2008; Male, 2007; Brazell and Davies, 2013, 2011; Kraus, 2009; Zeegen, 2005).

This research began historically, defining the moment editorial illustration came into being around a hundred and twenty years ago when a profound change in image culture occurred within newspapers, with the advent of halftone printing technologies (Beegan, 2008; Sinnema, 1998).

This not only brought to light the persistence of the illustrational, despite the newly dominant power of the news photograph, but it also suggested a particular structure of underlying attributes that were present within all editorial illustration. Furthermore when placed within a contemporary context, I also began to develop an understanding of editorial illustration as a relational object with particular material (Kittler, 1999; Manovich, 2002), semiotic (Kress and van Leeuwen, 2001, 2006; Hayles, 2002, 2005; Barthes, 1977), social (Kress and van Leeuwen, 2006; Hall 1993; Hebdige 1993) and ideological attributes (Žižek, 1997, 1997-2007; Hall, 1973). This led to the construction of a model designed to capture key components - attributes - that are present with variable weight and degree, and in different formations. It became my argument that when taken together they shape and enable the core role of editorial illustration, which is to enable or to facilitate the act of deliberation in the reader.

The development of this *constellation of attributes of editorial illustration*, enabled me to explore specific forms and developments within editorial illustration and reveal the individual dynamics and interactive behaviours. It pointed to the experiential **attribute of manifestation**: the expressive modalities afforded by any given contextualising platform; the signifying **attribute of translation**: revealing the particular textual structures of story and illustration and the emergent nature of this relationship; and the relational **attribute of reflection**: where editor, author, illustrator and reader, all seek to be represented and seek the presence of the others, and where the reader's real and imagined engagement is a continual concern. And finally it pointed to the ideological **attribute of engagement**: the particular way editorial illustration establishes a bridge between the reader's reality and the ideological message.

7.1 Illustration Effect

The *constellation of attributes* established not only a relatively stable model that defined editorial illustration, but also a number of findings arose which have profoundly shifted my understanding of the nature of editorial illustration. One of the key findings was a shift from the perception of illustration as a clearly differentiated artefact positioned next to an equally defined story, towards an understanding of the illustration and story as two medial translations of a non-materialised conceptual text. Enabled by the specific affordances of the contextualising medium, these translations operate always in proximity to each other, where it is the task of the illustration to point to the story. I have thus extended the concept of material textuality (Hayles, 2002, 2005) into illustration.

This extension led me to consider the illustration as an emergent practice within an integrated and fully relational textual object. Here *what is*

illustrated and *what is illustration* is no longer defined by particular mediality, but instead by the mode through which they operate; something afforded by the contextualising media structures and particularly visible in the dynamic and emerging medial relationships of online media practices.

This relational emergence is not, however, offered in the design of most news-media websites, which favour informational structures, based on the notion that each component delivers additional information; here illustration is all but disabled.

However in the distinctive environment of online mediality, editorial story culture is evolving into new forms, such as the interactive documentary (IDFA Doclab, 2014), news-games (Games for change, 2014), memes and data driven visualisations (Guardian Data blog, 2009).

Some of these forms are distinct, in that they present an independent ideological structure, where story and illustration appear fully interwoven and are expressed through various modalities. I called these new formations, *illustrated works*. Though they seem radical departures from what is understood as editorial illustration, and appear in a wide range of forms, they contain the same constellation of attributes as the printed editorial illustration.

Where the changing technologies of print enabled and developed a print culture in which illustration could become editorial illustration, it is my proposition that the online publishing culture, developed through online technologies, is revealing a distinctive continuation of editorial illustration which has nevertheless been so radically transformed in appearance that it should be recognised as a distinct new field, online editorial illustration. How this practice develops and what forms it will take are as yet unknown, but the conditions that will allow it to flourish are already in place.

7.2 Practice-Led Research and the Method of Data Driven Illustration

Though perhaps not always explicit or visible, my practice has played a major role in supporting the insights that emerged from the theoretical research. For example: only through learning to write and apply code did I understand the vital role of programming in translation and aesthetic expression; and only through exploring and applying data streams, did I understand the extent of the semiotic and expressive possibilities of data and code. Moreover I would never have been able to comprehend and explore the materiality of data and of data as hidden text.

Through the practice element of this research I developed a proof of concept, which gave rise to a particular digitally native method of illustration. This is a method where the story is told through an emergent live data stream, which simultaneously functions as the driver of expressive aspects of the illustration. What it brought to the fore was not only the distinctive hidden textuality of data and how this operates through

particular forms of expression, for instance visualisation, but also the emergent nature of *real-time*, of *duration* and the indexical qualities of data representation. In contrast to data visualisation which reflects on the data itself, data driven illustration offers the potential for deliberation, through illustration, on the questions and ideological messages that frame the data, and ultimately on the story told through the data itself, as and when it emerges,

With the growing interest in data retrieval and data analysis, particularly in journalism and the growing role of data in social decision making processes, data driven illustration can be an important humanising element alongside other communication strategies and can create an alternative insight for uninitiated communities in complex human, technological and environmental structures.

7.3 Editorial Illustration as a Multimodal Practice

Understanding illustration as a multimodal practice, opens up the field of editorial illustration to far more expressive and medial possibilities than are traditionally considered part of its domain. It takes editorial illustration and illustration in general away from being concerned exclusively with visual expression, particular forms of narrative or distinct communicative contexts. It opens up an understanding of online media and computer based practices in which the position of illustration is closely interwoven with other design structures and creation processes, and moves along collaborative and interdisciplinary lines, although not necessarily towards a single predictable outcome.

This thesis presents a viable strategy to discuss those notions of illustration and illustration practice that can extend the discipline beyond the shrinking print industry. For the educational and academic discourse of the discipline of illustration, it presents a tool to re-evaluate the approach and positioning of illustration within visual communication education and practices.

7.4 Next Questions

This thesis is a first step in exploring editorial illustration and the emergent territory of online illustration studies and also towards developing a viable and robust theoretical language. Not simply for the sake of it but to do justice to the importance of the work that editorial illustration performs.

The constellation of the four attributes of editorial illustration that I arrived at provides an initial structure and whatever its limitations offers both a tool and an invitation to further scholarly deliberation and the development of other forms and fields of illustration.

Until now the area of online illustration has not been properly investigated and as a consequence has not been understood for its current

relevance within the discipline of illustration. All of this suggests an urgent need to continue to construct a framework and platforms that move beyond the print paradigm and can provide a shared language for illustration studies.

My practice-led research developed a proof of concept for a method of data driven illustration, and though it has not yet been implemented, it points towards a new horizon where it can not only be of use as reflective tool within the context of editorial stories, but also as an emancipatory tool that supports greater levels of deliberation around ever more complex social, scientific and political questions. Practical and technological research, as well as investigations into its communicative possibilities and impact, warrant further development, in both academic and professional contexts.

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Bibliography

- Allen, J.E. (1947) *Newspaper Designing*. New York: Harper & Brothers
- Anon. (2009) *Artist Models 'Adopt' Poster After Obama 'Hope' Image* [online] available from <<http://www.catchannel.com/news/2009/01/12/artist-creates-poster-for-adopt-a-pet.aspx>> [14 September 2014]
- Anon. (2014a) 'Internet Meme'. in *Wikipedia, the Free Encyclopedia* [online] available from <http://en.wikipedia.org/w/index.php?title=Internet_meme&oldid=619446009> [5 August 2014]
- Anon. (2014b) *The Evolution of Big Data, and Where We're Headed | Innovation Insights* [online] available from <<http://www.wired.com/2014/03/evolution-big-data-headed/>> [14 May 2014]
- Anon. (n.d.) *Internet and Memetics* [online] available from <<http://pespmc1.vub.ac.be/Conf/MemePap/Marshall.html>> [5 August 2014a]
- Anon. (n.d.) 'Nieman Reports | Fast-Paced Journalism's Neglect of Nuance and Context'. *Nieman Reports* [online] available from <<http://www.nieman.harvard.edu/reports/article/100028/Fast-Paced-Journalisms-Neglect-of-Nuance-and-Context.aspx>> [1 April 2012b]
- Anon. (n.d.) *Visualising Data » Blog Archive » Essential Resources: Programming Languages, Toolkits and Libraries*. available from <<http://www.visualisingdata.com/index.php/2013/09/essential-resources-programming-languages-toolkits-and-libraries/>> [16 April 2014c]
- Anon. (n.d.) *Wind Speed Units & Wind Directions - Windfinder* [online] available from <<http://www.windfinder.com/wind/windspeed.htm>> [18 April 2014d]
- Ash, O.J. (2012) 'Inside the Guardian's CMS: Meet Scribe, an Extensible Rich Text Editor'. *The Guardian* [online] 20 March. available from <<http://www.theguardian.com/info/developer-blog/2014/mar/20/inside-the-guardians-cms-meet-scribe-an-extensible-rich-text-editor>> [29 July 2014]
- Associated Press, A. (n.d.) *Apology for Nurse Jailed for Murdering Seven Patients* [online] available from <<http://www.independent.co.uk/news/world/europe/apology-for-nurse-jailed-for-murdering-seven-patients-1944577.html>> [23 July 2014]
- Barnhurst, K.G. (1993) *Seeing the Newspaper*. St. Martin's Press
- Barnhurst, K.G. and Nerone, J. (2000) 'Civic Picturing vs. Realist Photojournalism the Regime of Illustrated News, 1856-1901'. *Design Issues* 16 (1), 59–79
- Barrett, E., Bolt, Barbara (2010) *Practice as Research: Approaches to Creative Arts Enquiry*. London: I. B. Tauris
- Barthes, R. (1977a) 'An Introduction to the Structural Analysis of Narrative, 1966'. in *Image Music Text*. vol. 6. Fontana Press, 79–124
- Barthes, R. (1977b) *Elements of Semiology*. Reissue edition. New York: Hill and Wang
- Barthes, R. (1977c) 'Rhetoric of the Image, 1964'. in *Image-Music-Text*. Fontana Press
- Barthes, R. (1977d) 'The Photographic Message, 1961'. in *Image-Music-Text*. Fontana, 16–31

- Barthes, R. (2009) 'Myth Today'. in *Mythologies*. Vintage, 131–187
- Bartoloni, P. (2004) 'Benjamin, Agamben, and the Paradox of Translation'. *CLCWeb: Comparative Literature and Culture* [online] 6 (2). available from <<http://docs.lib.purdue.edu/clcweb/vol6/iss2/5>>
- Baylen, J.O. (1992) 'The British Press, 1861-1961'. in *The Encyclopedia of the British Press, 1422-1992*. ed. by Griffiths, D. Palgrave Macmillan
- Bassett, C. (forthcoming 2015) 'Plenty as a Response to Austerity?: Big Data Expertise, Cultures, and Communities.' *European Journal of Cultural Studies*
- BBC (2012) 'School Shooting: How It Happened'. *BBC* [online] 18 December. available from <<http://www.bbc.co.uk/news/world-us-canada-20738998>> [3 August 2014]
- BBC (2013) 'Illegal Migrants Face New Crackdown'. *BBC* [online] 10 October. available from <<http://www.bbc.co.uk/news/uk-politics-24469584>> [5 February 2014]
- BBC (2014) *What Is a Cookie?* [online] available from <<http://www.bbc.co.uk/privacy/bbc-cookies-policy.shtml>> [11 September 2014]
- Beegan, G. (1995) 'The Mechanization of the Image: Facsimile, Photography, and Fragmentation in Nineteenth-Century Wood Engraving'. *Journal of Design History* 257–274
- Beegan, G. (2007) 'The Studio: Photomechanical Reproduction and the Changing Status of Design'. *Design Issues* 23 (4), 46–61
- Beegan, G. (2008) *The Mass Image: A Social History of Photomechanical Reproduction in Victorian London*. Palgrave Macmillan
- Beiguelman, G. (2006) 'For an Aesthetics of Transmission'. *First Monday* [online] available from <<http://uncommonculture.org/ojs/index.php/fm/article/view/1553>> [18 July 2014]
- Benjamin, W. (1992) 'The Task of the Illustrator'. in *Illuminations*. ed. by Arendt, H. London: Fontana Press
- Berger, A.A. (1972) *Media and Communication Research Methods: An Introduction to Qualitative and Quantitative Approaches*. 2nd edn. Sage Publications, Inc
- Berry, D.M. (2014) *Critical Theory and the Digital*.
- Boesler, M. and Perlberg, S. (2013) *The 41 Most Unusual Economic Indicators* [online] available from <http://www.businessinsider.com/unusual-economic-indicators-2013-10?utm_source=buffer&utm_campaign=Buffer&utm_content=bufferfb876&utm_medium=facebook> [10 August 2014]
- Bogost, I., Ferrari, S., and Schweizer, B. (2010) *Newsgames*. MIT Press
- Bolanos, M., Forrest, J., and Hahsler, M. (n.d.) *Introduction to Stream: An Extensible Framework for Data Stream Clustering Research with R*. [online] available from <<http://r.mirror.mendoza-conicet.gob.ar/web/packages/stream/vignettes/stream.pdf>> [8 August 2014]
- Bolt, B. (2007) 'The Magic Is in Handling'. in *Practice as Research: Approaches to Creative Arts Enquiry*. ed. by Barrett, E. and Bolt, B. London: I. B. Tauris
- Bolter, J.D. and Grusin, R. (2000) *Remediation: Understanding New Media*. 1st edn. The MIT Press
- Boomen, M. van den (2014) *Transcoding the Digital: How Metaphors Matter in New Media*. Amsterdam: Institute of Network Cultures

- boyd, danah and Crawford, K. (2012) 'Critical Questions for Big Data'. *Information, Communication & Society* 15 (5), 662–679
- Brake, L. and Demoor, M. (eds.) (2009) *The Lure of Illustration in the Nineteenth Century: Picture and Press*. Palgrave Macmillan
- Brazell, D. and Davies, J. (2011) *Making Great Illustration*. A & C Black Publishers Ltd
- Brazell, D. and Davies, J. (2013) *Understanding Illustration*. London: A&C Black Visual Arts
- Brocklehurst, J. (2013) 'Tap My Drawings'. *Varoom* (1)
- Brown, L. (1992) 'The British Press, 1861-1961'. in *The Encyclopedia of the British Press, 1422-1992*. ed. by Griffiths, D. Palgrave Macmillan
- Bure, G. de (2001) *The Golden Age of Magazine Illustrations: The 60s and 70s*. Illustrated Edition. Vilo Publishing
- Callon, M.A. (1987) 'Society in the Making: The Study of Technology as a Tool for Sociological Analysis'. in *The Social Construction of Technological Systems*. MIT Press
- Carr, N. (2010) *The Shallows: What the Internet Is Doing to Our Brains*. W. W. Norton & Company
- Cashmore, P. (2012) *Why 2013 Is the Year of Responsive Web Design* [online] available from <<http://mashable.com/2012/12/11/responsive-web-design/>> [30 July 2014]
- Chatto, W.A. (1839) *A Treatise on Wood Engraving, Historical and Practical: With Upwards of Three Hundred Illustrations, Engraved on Wood by John Jackson*. Charles Knight and Co.
- Chun, W.H.K. (2005) 'On Software, or the Persistence of Visual Knowledge'. *grey room* (18), 26–51
- Cohen, N. (2006) 'News Online Seems to Have Long Shelf Life'. *The New York Times* [online] 17 July. available from <<http://www.nytimes.com/2006/07/17/business/media/17decay.html>> [7 May 2014]
- Comer, D.E. and Stevens, D.L. (2000) *Internetworking with Tcp/ip : Principles, Protocols, and Architecture*. Englewood Cliffs, NJ [u.a.: Prentice-Hall International
- Consalvo, M. and Dutton, N. (2006) 'Game Analysis: Developing a Methodological Toolkit for the Qualitative Study of Games'. *Game studies: The international journal of computer game research* [online] 6 (1). available from <http://gamestudies.org/0601/articles/consalvo_dutton>
- Coote, A. and Franklin, J. (eds.) (2013) *Time on Our Side: Why We All Need a Shorter Working Week*. New Economic Foundation
- Cordella, A. (2010) 'Information Infrastructure: An Actor-Network Perspective'. *International Journal of Actor-Network Theory and Technological Innovation (IJANTTI)* 2 (1), 27–53
- Corner, J. (1983) 'Textuality, Communication and Power'. in *Language, Image, Media*. ed. by Davis, H. and Walton, P. Palgrave Macmillan, 266–81
- Cramer, F. (2008) 'Language'. in *Software Studies: A Lexicon*. ed. by Fuller, M. Cambridge: Mass. : MIT Press, 168–173
- Cramer, F. (2014) *What Is 'Post-Digital'? | a Peer-Reviewed Journal About_*. [January 2014] available from <<http://www.aprja.net/?p=1318>> [3 March 2014]

- Crary, J. (2013) *24/7: Late Capitalism and the Ends of Sleep*. London, New York: Verso Books
- Crow, D. (2010) *Visible Signs: An Introduction to Semiotics in the Visual Arts*. 2nd edition. Lausanne; Worthing: AVA Publishing
- Crush, P. (2011) 'What Happened to Our Work-Life-Balance?'. *The Guardian* [online] 18 June. available from <<http://www.theguardian.com/worklifeuk/work-life-balance-uk>> [10 August 2014]
- Cypher, M. and Richardson, I. (2006) 'An Actor-Network Approach to Games and Virtual Environments'. in *Proceedings of the 2006 International Conference on Game Research and Development* [online] held 2006. Murdoch University, 254–259. available from <<http://dl.acm.org/citation.cfm?id=1234382>> [13 August 2014]
- Darley, A. (2000) *Visual Digital Culture: Surface Play and Spectacle in New Media Genres*. Routledge
- Dawkins, R. (1989) *The Selfish Gene*. 2nd Revised. Oxford ; New York: Oxford Paperbacks
- Dean, J. (2010) *Blog Theory: Feedback and Capture in the Circuits of Drive*. Cambridge, UK; Malden, MA: Polity
- Deegan, M. and Sutherland, K. (2009) *Transferred Illusions Digital Technology and the Forms of Print* [online] Farnham, England; Burlington, VT: Ashgate. available from <<http://public.eblib.com/EBLPublic/PublicView.do?ptiID=438499>> [14 September 2013]
- Deloumeau-Prigent, K. (2013) 'Mobile-First Responsive Web Design and IE8'. *The Guardian* [online] 14 October. available from <<http://www.theguardian.com/info/developer-blog/2013/oct/14/mobile-first-responsive-ie8>> [29 July 2014]
- DiNucci, D. (1999) 'Fragmented Future'. *Print Magazine* [online] (32). available from <http://www.darcyd.com/fragmented_future.pdf>
- Eco, U. (1978) *A Theory of Semiotics*. John Wiley & Sons
- Elkins, J. (1995) 'Marks, Traces, "Traits," Contours, "Orli," and "Splendores": Nonsemiotic Elements in Pictures'. *Critical Inquiry* 21 (4), 822–860
- Elkins, J. (2011) *What Photography Is*. 1st edn. Routledge
- Ellis, J. (1980) 'Ideology and Subjectivity'. in *Culture, Media and Language*. ed. by Hall, S. Hutchinson-Ross
- Esnault, L., Zeiliger, R., and Vermeulin, F. (2006) 'On the Use of Actor-Network Theory for Developing Web Services Dedicated to Communities of Practice'. *Practice* 298–306
- Ettema, J. (2011) 'News as Culture'. in *The Routledge Companion to News and Journalism*. Revised edition. ed. by Stuart Allan. London; New York: Routledge, 289–300
- Fenton (2011) 'Fenton News in the Digital Age'. in *Routledge, Companion to News and Journalism*. Routledge
- Fenton, J. (2013) 'Imgs Are Content Too'. [24 January 2013] available from <<http://www.creativebloq.com/design/s-are-content-too-1135836>> [1 August 2014]
- Fenton, N. (2009) *New Media, Old News: Journalism & Democracy in the Digital Age*. SAGE Publications Ltd

- Fenton, N. (2010) *New Media, Old News: Journalism & Democracy in the Digital Age*. Los Angeles: SAGE
- Flanagan, M. (2009) *Critical Play: Radical Game Design* [online] Cambridge, Mass.: MIT Press.
- Fletcher, N. (2008) 'Biggest Ever One-Day Rise for FTSE 100'. *The Guardian* [online] available from <<http://www.theguardian.com/business/marketforceslive/2008/sep/19/marketturmoil.ftse>> [10 April 2014]
- Flink Labs (2013) *Automated Journalism in Data Visualization*. [online] available from <<http://www.slideshare.net/Flinklabs/automatedjournalismindataviz>> [11 April 2014]
- Flusser, V. (2011) *Into the Universe of Technical Images*. trans. by Roth, N.A. University of Minnesota Press
- Foldoc (2014) *FOLDOC - Computing Dictionary* [online] available from <<http://foldoc.org/>> [8 September 2014]
- Forceville, C. (1995) *Pictorial Metaphor in Advertising*. London; New York: Routledge
- Frayling, C. (1993) 'Research in Art and Design'. *Royal College of Art Research Papers* [online] 1 (1). available from <<http://researchonline.rca.ac.uk/id/eprint/384>> [23 February 2014]
- Fredin, E. (1997) 'Rethinking the News Story for the Internet: Hyperstory Prototypes and a Model of the User'. *Journalism & Mass Communication Monographs* 163, 1–47
- Fry, B. (2007) *Visualizing Data: Exploring and Explaining Data with the Processing Environment*. 1 edition. Sebastopol, CA: O'Reilly Media
- Fuller, M. (2007) *Media Ecologies: Materialist Energies in Art and Technoculture*. MIT Press (MA)
- Fuller, M. (2008) *Software Studies: A Lexicon*. Cambridge: Mass. : MIT Press
- Fuller, M. and Cramer, F. (2008) 'Interface'. in *Software Studies : A Lexicon*. Cambridge: Mass. : MIT Press
- Galloway, A.R. (2012) *The Interface Effect*. Polity Press
- Games for Change (2014) *Games for Change* [online] available from <<http://www.gamesforchange.org/>> [7 August 2014]
- Gerbaudo, P. (2012) *Tweets and the Streets: Social Media and Contemporary Activism*. London: Pluto Press
- Gitelman, L. (ed.) (2013) *'Raw Data' Is an Oxymoron*. MIT Press (MA)
- goriunova, olga (2013) *Aesthetic Growth: Becoming a Human, a Thing or a Piece of Code*. [online] available from <<http://www.transmediale.de/content/bwpwap-users-keynote-with-olga-goriunova>>
- Grove, J. (2009) 'Towards Illustration Theory: Robert Weaver, Harold Rosenberg, and the Action Illustrator?'. *Journal of Art Criticism* 24 (1), 69–84
- Grove, J. (2012) 'Netting Jellyfish: A Point of View on Illustration Research from the United States and Canada'. *Journal of Writing in Creative Practice* 4 (3), 287–307
- Guardian (2013) *The Guardian, Our Readers & Circulation* [online] available from <<http://www.theguardian.com/advertising/guardian-circulation-readership-statistics>> [27 July 2014]

- Guardian, T. and theguardian.com (2011) Introducing the Guardian iPad Edition - Video [online] available from <<http://www.theguardian.com/technology/video/2011/oct/10/guardian-ipad-edition-video>> [23 September 2014] Guardian (n.d.) *The Guardian and Observer Reader Profile*. The Guardian. available from <image.guardian.co.uk/sys-files/Guardian/documents/2013/01/25/GuardianKeyAudienceStats.pdf?guni=Article:in%20body%20link> [27 July 2014]
- Guardian Data blog (2009) *Data Journalism and Data Visualization from the Datablog | News | The Guardian* [online] available from <<http://www.theguardian.com/news/datablog>> [24 February 2014]
- Hall, S. (1973) 'The Determinations of News Photographs'. in *The Manufacture of News: Social Problems, Deviance and the Mass Media*. Beverly Hill: Sage, 176–90
- Hall, S. (ed.) (1980) *Culture, Media, Language: Working Papers in Cultural Studies, 1972-79*. London; [Birmingham, West Midlands]: Hutchinson ; Centre for Contemporary Cultural Studies, University of Birmingham
- Hall, S. (1993) 'The Television Discourse - Encoding and Decoding'. in *The Cultural Studies Reader*. 2nd edn. ed. by Dunning, S. Routledge
- Hamid, M. and Holmes, A. (2013) 'How Do E-Books Change the Reading Experience?'. *The New York Times* [online] 31 December. available from <<http://www.nytimes.com/2014/01/05/books/review/how-do-e-books-change-the-reading-experience.html>> [25 February 2014]
- Handa, C. (2004) *Visual Rhetoric in a Digital World: A Critical Sourcebook*. First Edition. Bedford/St. Martin's
- Harman, G. (2009) *Prince of Networks: Bruno Latour and Metaphysics*. Prahan, Vic.: Re.press
- Hayles, N.K. (2002) *Writing Machines*. MIT Press
- Hayles, N.K. (2003) 'Translating Media: Why We Should Rethink Textuality'. *The Yale Journal of Criticism* 16 (2), 263–290
- Hayles, N.K. (2005) *My Mother Was a Computer: Digital Subjects and Literary Texts*. New edition. University of Chicago Press
- Hayles, N.K. (2007) 'Intermediation: The Pursuit of a Vision'. *New Literary History* 38 (1), 99–125
- Hebdige, D. (1993) 'The Function of Subculture'. in *The Cultural Studies Reader*. 2nd edn. ed. by Dunning, S. Routledge
- Heller, S. and Arisman, M. (2000) *The Education of an Illustrator*.
- Heller, S. and Arisman, M. (2004) *Inside the Business of Illustration*. Allworth Communications, Inc.
- Heller, S. and Chwast, S. (2008) *Illustration: A Visual History*. First Edition edition. Abrams
- Hibbert, C. (1975) *The Illustrated London News: Social History of Victorian Britain*. 1st edn. London: Angus & Robertson
- Hirst, M. (2011) *News 2.0: Can Journalism Survive the Internet?*. Crows Nest, N.S.W.: Allen & Unwin
- HOI, institute for Media Auditing (2013) *Gratis Opvraagmodule* [online] available from <<http://www.hoi-online.nl/798/Gratis-opvraagmodule.html>> [6 September 2014]

- Hoogslag, N. (2011) 'The Significance of a Modest Medium'. *Varoom* (17), 56–58
- Hoogslag, N. (2012) 'Think Editorial Illustration- Workshop'. in *The Edge of Our Thinking*. Royal College of Art
- Hoogslag, N. (2013) 'The Signifier of Incompleteness: Editorial Illustration in the New Media Age'. *Varoom lab* (6)
- IDFA (n.d.) *IDFA DocLab | The Official New Media Program of IDFA, Showcasing New Forms of Documentary Storytelling, Digital Technology and Media Art*. [online] available from <<http://www.doclab.org/>> [4 September 2014]
- Iliinsky, N. (2012) 'Why Is Data Visualization So Hot?'. [2012] available from <<http://blog.visual.ly/why-is-data-visualization-so-hot/>> [10 September 2014]
- Jackson, M. (1885) *The Pictorial Press, Its Origine and Progress*. London: reprint Burt Franklin 1969
- Jakobson, R. (2000) 'On Linguistic Aspects of Translation'. in *The Translation Studies Reader*. ed. by Venuti, L.
- Jenkins, H. (2006) *Fans, Bloggers and Gamers: Essays on Participatory Culture*. New York: New York University Press
- Johnston, A. (2014) 'Jacques Lacan'. in *The Stanford Encyclopedia of Philosophy* [online] Summer 2014. ed. by Zalta, E.N. available from <<http://plato.stanford.edu/archives/sum2014/entries/lacan/>> [28 July 2014]
- Joshi, D., Datta, R., Federovskaya, E., Wang, J., Li, J., and Luo, J. (2011) 'Aesthetic and Emotions in Images a Computerised Perspective'. *IEEE Signal Processing Magazine* 28 (5), 94–115
- Juul, J. (2001) 'Games Telling Stories?-A Brief Note on Games and Narratives'. *Game studies: The international journal of computer game research* [online] 1 (1). available from <<http://www.gamestudies.org/0101/juul-gts/>> [7 August 2014]
- Kaplan, A.M. and Haenlein, M. (2010) 'Users of the World, Unite! The Challenges and Opportunities of Social Media'. *Business Horizons* 53 (1), 59–68
- King, E. (2006) 'Illustrated Guardian'. *Varoom: the journal of illustration and made images* 1
- Kitson, M. (1991) 'Computer Graphics in Art-and-Design Education: The Problem of Planning for Change'. *Leonardo* 24 (5), 541
- Kittler, F. (1996) 'The History of Communication Media, Introduction'. *CTheory.net* [online] (ga114). available from <www.ctheory.net/articles.aspx?id=45>
- Kittler, F. (1999) *Gramophone, Film, Typewriter*. illustrated edition. trans. by Winthrop-Young, G. and Wutz, M. Stanford University Press
- Kittler, F. (2010) *Optical Media: Berlin Lectures 1999*. 1st edn. Polity
- Know Your Meme (n.d.) *Internet Meme Database | Know Your Meme* [online] available from <<http://knowyourmeme.com/>> [3 August 2014]
- Know your meme (n.d.) *Obama 'Hope' Posters* [online] available from <<http://knowyourmeme.com/memes/obama-hope-posters>> [3 August 2014]
- Köhler, B., David, S., and Blumtritt, J. (2010) *The Slow Media Manifesto*. [2 January 2010] available from <<http://en.slow-media.net/manifesto>>
- Kooistra, L.J. (n.d.) 'The Moxon Tennyson as Textual Event: 1857, Wood Engraving, and Visual Culture'. *Branch* [online] available from <<http://www.branchcollective>>

- org/?ps_articles=lorraine-janzen-kooistra-the-moxon-tennyson-as-textual-event-1857-wood-engraving-and-visual-culture> [22 July 2014]
- Korry, F. (2013) *More Employees Unhappy With Work-Life Balance: Survey* [online] available from <<http://www.workforce.com/articles/more-employees-unhappy-with-work-life-balance-survey>> [10 August 2014]
- Koutsaftikis, I., Nanas, N., and Vavalis, M. (2013) 'Front-Paging Online Newspapers'. *First Monday* [online] 18 (2). available from <<http://firstmonday.org/ojs/index.php/fm/article/viewArticle/4352>> [18 July 2014]
- Kraus, J. (2009) *All the Art That's Fit to Print (And Some That Wasn't): Inside the New York Times Op-Ed Page*. Columbia University Press
- Kress, G. (2003) *Literacy in the New Media Age*. Routledge
- Kress, G. and van Leeuwen, T. van (2001) *Multimodal Discourse: The Modes and Media of Contemporary Communication*. London: Edward Arnold
- Kress, G. and van Leeuwen, T. van (2006) *Reading Images: The Grammar of Visual Design*. 2nd edn. Routledge
- Lacan, J. (1956) *The Language of the Self: The Function of Language in Psychoanalysis*. 1998th edn. trans. by Wilden, A. Baltimore MD: Johns Hopkins University Press
- Lacan, J. and Alain-Miller, J. (1997) *The Seminar of Jacques Lacan: The Ethics of Psychoanalysis*. trans. by Porter, D. New York: W. W. Norton & Company
- LaGrandeur, K. (2003) 'Digital Images and Classical Persuasion'. in *Eloquent Images* [online] ed. by Hocks, M. and Kendrick, M. MIT.
- Latour, B. (1986) 'Visualization and Cognition'. *Knowledge and society* 6, 1–40
- Latour, B. (1997) 'On Actor-Network Theory -A Few Clarifications'. [1997] available from <www.nettime.org>
- Latour, B. (1998) 'How to Be Iconophilic in Art, Science and Religion'. in *Picturing Science, Producing Art*. ed. by Jones, C.A., Galison, P., and Slaton, A. New York: Routledge
- Latour, B. (1999) 'On Recalling ANT'. *The Sociological Review* 47 (S1), 15–25
- Latour, B. (2005) *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford; New York: Oxford University Press
- Laurel, B. (1993) *Computers as Theatre*. Addison-Wesley Professional
- Law, J. (ed.) (1986) *Power, Action, and Belief: A New Sociology of Knowledge?*. London; Boston: Routledge & Kegan Paul
- Law, J. (1992) 'Notes on the Theory of the Actor-Network: Ordering, Strategy, and Heterogeneity'. *Systems practice* 5 (4), 379–393
- Law, J. (2009) 'Actor Network Theory and Material Semiotics'. in *The New Blackwell Companion to Social Theory* [online] ed. by Turner, B.S. John Wiley & Sons, 141–158.
- Law, J. and Hassard, J. (1999) *Actor Network Theory and After*. 1st edn. Oxford England; Malden, MA: Wiley-Blackwell
- Leverette, M. (2003) 'Towards an Ecology of Understanding; Semiotics, Medium Theory and the Uses of Meaning'. *Image & Narrative* (6). available from <<http://www.imageandnarrative.be/inarchive/mediumtheory/marcleverette.htm>>

- Levin, J.R., Anglin, G.J., and Carney, R.N. (1987) 'On Empirically Validating Functions of Pictures in Prose'. in *The Psychology of Illustration*. ed. by Willows, D.M. and Houghton, H.A. Springer
- Levitt, S.D. and Dubner, S.J. (2007) *Freakonomics: A Rogue Economist Explores the Hidden Side of Everything*. 1st edn. Place of publication not identified: Penguin
- Lialina, O. (2012) 'Turing Complete User'. [2012] available from <<http://contemporary-home-computing.org/turing-complete-user/>>
- Logan, P.M. (2003) 'The Popularity of Popular Delusions: Charles Mackay and Victorian Popular Culture'. *Cultural Critique* 54, 213–241
- Losowsky, A., Leslie, J., and Koedinger, M. (eds.) (2009) *We Make Magazines: Inside the Independents*. Luxembourg: Editions Mike Koedinger SA
- Lovink, G. (2008) *Zero Comments: Blogging and Critical Internet Culture*. Routledge
- Lovink, G. (2012) *Networks without a Cause: A Critique of Social Media*. Polity Press
- Ludovico, A. (2012) *Post-Digital Print: The Mutation of Publishing Since 1894*. Eindhoven: Onomatopee
- Ludwig, M.D. and Gilmore, G. (2005) *Modern News Editing*. Wiley-Blackwell
- Maidment, B. (2001) *Reading Popular Prints 1790-1870*. Manchester University Press
- Male, A. (2007) *Illustration: A Theoretical and Contextual Perspective*. AVA Publishing
- Manovich, L. (2002) *The Language of New Media*. New Ed edition. Cambridge, Mass.: MIT Press
- Manovich, L. (2006) *Import/Export: Design Workflow and Contemporary Aesthetics* [online] available from <<http://manovich.net/index.php/projects/import-export>>
- Manovich, L. (2012) 'Data Stream, Database, Timeline (new Article by Lev Manovich, Part 1)'. [2012] available from <<http://lab.softwarestudies.com/2012/10/data-stream-database-timeline-new.html>> [17 February 2014]
- Marcotte, E. (2010) *Responsive Web Design* [online] available from <<http://alistapart.com/article/responsive-web-design>> [30 July 2014]
- Mateas, M. (2005) 'Procedural Literacy: Educating the New Media Practitioner'. *On The Horizon* 13 (special issue)
- McCandless, D. (2012) *Information Is Beautiful*. New edition. Collins
- McDaid, J. (2000) *Narrative in the Information Society*. [2000] available from <<http://harddeadlines.com/essays?q=node/8>>
- McGann, J.J. (1991) *The Textual Condition*. Princeton, N.J.: Princeton University Press
- McGann, J.J. (2004) *Radiant Textuality: Literature After the World Wide Web*. Palgrave Macmillan
- McKenzie, D.F. (1999) *Bibliography and the Sociology of Texts*. Cambridge: Cambridge Univ. Press
- McLuhan, M. (2001) *Understanding Media*. 2nd edn. London: Routledge
- Meikle, G. and Redden, G. (2010) *News Online: Transformations and Continuities*. 1st edn. Palgrave Macmillan
- Meikle, G. and Young, S. (2011) *Media Convergence: Networked Digital Media in Everyday Life*. Palgrave Macmillan
- Messararis, P. (1997) *Visual Persuasion: The Role of Images in Advertising*. Sage Publications, Inc

- Miller, J.H. (1992) *Illustration*. Reaktion Books
- Mitchell (1987) *Iconology: Image, Text, Ideology*. New. Chicago: University of Chicago Press
- Mitchell, A. (2014) 'State of the News Media 2014: Overview'. [26 March 2014] available from <<http://www.journalism.org/2014/03/26/state-of-the-news-media-2014-overview/>> [1 August 2014]
- Mitchell, W.J. (1994) *The Reconfigured Eye: Visual Truth in the Post-Photographic Era*. MIT Press
- Mitchell, W.J.T. (1980) *The Language of Images*. University of Chicago Press
- Molleindustria (2013) *The Best Amendment* [online] available from <<http://www.molleindustria.org/the-best-amendment/>>
- Narcisse, E. (2013) *A Very 'Unofficial NRA Game' Uses Their Own Quotes to Shoot The Gun Lobby's Logic Full of Holes* [online] available from <<http://kotaku.com/5991223/a-very-unofficial-nra-game-uses-their-own-quotes-to-shoot-the-gun-lobbys-logic-full-of-holes>> [3 August 2014]
- National Film Board of Canada (2010) *The Test Tube* [online] available from <testtube.nfb.ca>
- Newman, N. (2014) 'Executive Summary and Key Findings of the 2014 Report'. [2014] available from <<http://www.digitalnewsreport.org/survey/2014/executive-summary-and-key-findings-2014/>> [3 September 2014]
- De Noo, M. (2010) *Lucia de B. - Summary* [online] available from <<http://luciadeb.nl/english/summary.html>> [23 July 2014]
- Norden, E. (1969) 'The Playboy Interview: Marshall McLuhan'. *Playboy Magazine* [online] March. available from <<http://www.nextnature.net/2009/12/the-playboy-interview-marshall-mcluhan/>> [22 October 2009]
- NOVA (n.d.) *NOVA - Detail - Nieuws* [online] available from <<http://www.novatv.nl/page/detail/nieuws/9907>> [23 July 2014]
- NRC media (2013) *Over Nrc Media* [online] available from <<http://www.nrcmedia.nl/over-ons/>>
- Ofcom (2014) *News Consumption in the UK: 2014 Report*.
- Office of National Statistics (2010) *Taxonomy* [online] available from <<http://ons.gov.uk/ons/taxonomy/index.html?nscl=Labour+Market>> [10 August 2014]
- Office of National Statistics (2013) *Internet Access - Households and Individuals, 2013* [online] available from <<http://www.ons.gov.uk/ons/rel/rdit2/internet-access---households-and-individuals/2013/index.html>>
- Olga Goriunova (2013) *Aesthetic Growth: Becoming a Human, a Thing or a Piece of Code*. in 'Transmediale BWPWAP'. held 1 February 2013 at Berlin
- O' Reilly, T. (2005) *What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software* [online] available from <<http://oreilly.com/web2/archive/what-is-web-20.html>>
- O'Sullivan, J. and Heinonen, A. (2008) 'Old Values, New Media'. *Journalism Practice* 2 (3), 357–371
- Panofsky, E. and Heckscher, W.S. (1997) *Three Essays on Style*. MIT Press

- Peirce, C.S. (1958) *Collected Papers of Charles Sanders Peirce*. Harvard University Press
- Pennell, 1910 (1910) *THE HOUSE OF MOURNING: A GREAT ARTIST'S IMPRESSION*.
- Pereira, N.M. (2008) 'Book Illustration as (Intersemiotic) Translation: Pictures Translating Words'. *Meta : journal des traducteurs / Meta: Translators' Journal* 53 (1), 104–119
- Pew Research Center's Project for Excellence in Journalism (2010) *State of the News Media 2010* [online] available from <<http://pewresearch.org/pubs/1523/state-of-the-news-media-2010>>
- Pew Research Center's Project for Excellence in Journalism (2012) *The State of the News Media 2012* [online] available from <<http://stateofthemedias.org/2012/newspapers-building-digital-revenues-proves-painfully-slow/>>
- Plunkett, J. (2003) *Queen Victoria: First Media Monarch*. Oxford; New York: Oxford University Press
- Pold, S. (2005) 'Interface Realisms: The Interface as Aesthetic Form'. *Postmodern Culture* [online] 15 (2). available from <http://muse.jhu.edu/journals/postmodern_culture/v015/15.2pold.html> [18 July 2014]
- Procter, J. (2004) *Stuart Hall*. London; New York: Routledge
- Pruitt, J. and Grudin, J. (2003) 'Personas: Practice and Theory'. in *Proceedings of the 2003 Conference on Designing for User Experiences, 'DUX '03'*. held 2003
- Pykett, L. (1989) 'Reading the Periodical Press: Text and Context'. *Victorian Periodicals Review* 22 (3), 100–108
- Raff, J.-H. (n.d.) 'Theoretical Frameworks for the Conceptualization of Graphic Design in Use'. *Iridescent: Icoagrada Journal of Design Research* 2 (2).
- Reas, C. and Fry, B. (2010) *Getting Started with Processing*. Beijing; [Cambridge, Mass.]: O'Reilly
- Reas, C. and McWilliams, C. (2010) *Form+Code in Design, Art, and Architecture*. Princeton Architectural Press
- Reed, D. (1997) *Popular Magazine in Britain and the United States of America 1880-1960*. University of Toronto Press
- Repko, A.F. (2011) *Interdisciplinary Research: Process and Theory*. SAGE
- Richards, J. and Lewis, P. (2011) 'How Twitter Was Used to Spread – and Knock down – Rumours during the Riots'. *The Guardian* [online] 7 December. available from <<http://www.theguardian.com/uk/2011/dec/07/how-twitter-spread-rumours-riots>> [11 September 2014]
- Robson, C. (2011) *Real World Research: A Resource for Users of Social Research Methods in Applied Settings*. 3rd edn. Chichester, West Sussex: Wiley
- Rogers, S. (2011) 'Data Journalism at the Guardian: What Is It and How Do We Do It?'. *The Guardian* [online] 28 July. available from <<http://www.theguardian.com/news/datablog/2011/jul/28/data-journalism>> [1 August 2014]
- Rosenberg, H. (1978) *Saul Steinberg*. New York: Alfred A Knopf, in association with the Whitney Museum of American Art
- Ruskin, J. (1872) *Ariadne Florentina*. Oxford: National Library in ass. with New York And Chicago

- Rust, C., Mottram, J., and Till, J. (2007) *AHRC Research Review Practice-Led Research in Art, Design and Architecture*. 2. Arts and Humanities Research Council
- Sabbagh, D. (2011) 'Guardian and Observer to Adopt "Digital-First" Strategy'. *The Guardian* [online] 16 June. available from <<http://www.theguardian.com/media/2011/jun/16/guardian-observer-digital-first-strategy>> [3 September 2014]
- Salen, K. and Zimmerman, E. (2004) *Rules of Play: Game Design Fundamentals* [online] MIT Press.
- Schäfer, M.T. (2008) *Bastard Culture! User Participation and the Extension of Cultural Industries* [online] Dissertation. Utrecht: Universiteit Utrecht. available from <<http://cercles.vtlseurope.com:8098/arxius/pdf/E100157.pdf>> [29 August 2014]
- Segel, E. and Heer, J. (2010) 'Narrative Visualization: Telling Stories with Data'. *Visualization and Computer Graphics, IEEE Transactions on* 16 (6), 1139–1148
- Shattock, J. and Wolff, M. (1992) *The Victorian Periodical Press: Sampling and Sounding*. Toronto University Press
- Shiffman, D. (2008) *Learning Processing 2.0.: A Beginner's Guide to Programming Images, Animation, and Interaction*. Morgan Kaufmann
- Shiffman, D. (2012) *The Nature of Code: Simulating Natural Systems with Processing*. The Nature of Code
- Shifman, L. (2013) 'Memes in a Digital World: Reconciling with a Conceptual Troublemaker'. *Journal of Computer-Mediated Communication* 18 (3), 362–377
- Shillingsburg, P.L. (1996) *Scholarly Editing in the Computer Age: Theory and Practice*. Ann Arbor: University of Michigan Press
- Shirky, C. (2008) *Here Comes Everybody: The Power of Organizing without Organizations*. London: Allen Lane
- Siapera, E. and Veglis, A. (2012) *The Handbook of Global Online Journalism*. John Wiley & Sons
- Simpson, L. (n.d.) *How to Design a CMS for the Modern Newsroom* [online] available from <<https://medium.com/@itsleesimpson/how-to-design-a-cms-for-the-modern-newsroom-f11a53f8539f>> [29 July 2014]
- Sinnema, P.W. (1998) *Dynamics of the Pictured Page: Representing the Nation in the Illustrated London News*. Ashgate Pub.
- Smith, H. and Dean, R.T. (2009) *Practice-Led Research, Research-Led Practice in the Creative Arts*. Edinburgh.
- Soderman, A.B. (2007) 'The Index and the Algorithm'. *differences: A Journal of Feminist Cultural Studies* 18 (1), 153–186
- Sommerer, C., Jain, L.C., and Mignonneau, L. (2008) *The Art and Science of Interface and Interaction Design*. Springer
- Sontag, S. (1994) *Against Interpretation*. Vintage
- Soubra, D. (2012) *The 3Vs That Define Big Data* [online] available from <<http://www.datasciencecentral.com/forum/topics/the-3vs-that-define-big-data>> [16 April 2014]
- Stalder, F. (1997) *Actor-Network-Theory and Communication Networks: Toward Convergence*. [1997] available from <http://felix.openflows.com/html/Network_Theory.html#2>

- Stevens, S.S. (1946) 'On the Theory of Scales of Measurement'. *Science* 103 (2684), 677–680
- Stuart, A. (2006) *Online News: Journalism And The Internet*. McGraw-Hill International
- Sullivan, G. and Dean, R.T. (2009) 'Making Space: The Purpose and Place of Practice-Led Research'. in *Practice-Led Research, Research-Led Practice in the Creative Arts*. Edinburgh: Edinburgh University Press, 41–65
- Szarkowski, J. (1990) 'Photographs in Ink'. in *Photography Until Now*. 3. vol. 2. Moma, 6–12
- Terranova, T. (2004) *Network Culture: Politics For the Information Age*. London ; Ann Arbor, MI: Pluto Press
- The economist (2012) 'News Adventures'. *The Economist* [online] 8 December. available from <<http://www.economist.com/news/business/21567934-after-years-bad-headlines-industry-finally-has-some-good-news-news-adventures>> [1 August 2014]
- The Met Office (n.d.) *Met Office: Beaufort Scale* [online] available from <<http://www.metoffice.gov.uk/weather/marine/guide/beaufortscale.html>> [18 April 2014]
- Tufte, E.R. (1990) *Envisioning Information*. Graphics Press USA
- Tufte, E.R. (1992) *The Visual Display of Quantitative Information*. Reprinted. Graphics Press USA
- Turkle, S. (1997) *Life on the Screen: Identity in the Age of the Internet*. 1st Touchstone Ed. Simon & Schuster Inc
- Ward, J.S. and Barker, A. (2013) *Undefined By Data: A Survey of Big Data Definitions* [online] 1309.5821. arXiv e-print. available from <<http://arxiv.org/abs/1309.5821>> [18 November 2013]
- Wark, M. (2007) *Gamer Theory*. Harvard University Press
- Weinstein, S.B. (2005) *The Multimedia Internet*. New York: Springer
- Wibberley, S. (2014) *The Method in the Madness* [online] available from <<http://www.demos.co.uk/blog/the-method-in-the-madness>>
- Williamson, c. . (1890) 'The Illustrated London News and Its Rivals'. *Magazine of Art* 334–340
- Wolff, R. (2011) 'How the 1% Got Richer, While the 99% Got Poorer'. *The Guardian* [online] 26 October. available from <<http://www.theguardian.com/commentisfree/cifamerica/2011/oct/26/how-1-got-richer-99-poorer>> [8 April 2014]
- Wright, R. (2008) 'Data Visualisation'. in *Software Studies: A Lexicon*. Cambridge: Mass. : MIT Press, 78–87
- Wurff, R. and Lauf, E. (2005) *Print and Online Newspapers in Europe: A Comparative Analysis in 16 Countries*. Het Spinhuis
- YouGov and the Guardian (2013) *Changing Media Summit Report*.
- Zeegen, L. (2005) *The Fundamentals of Illustration*. AVA Publishing SA
- Žižek, S. (1997) *The Plague of Fantasies*. New edition. Verso Books
- Žižek, S. (2006) *How to Read Lacan*. London: Granta
- Zurkov, M. (2012) *Mesocosm (Wink, Texas)* [online] available from <<http://o-matic.com/play/friend/mesocosmWINK/>>

List of Interviews

- Akkeren, P. (2012) *Interview Paula van Akkeren, picture editor NRC*, 19 December 2012
- Akkeren, P. (2014) *Interview Paula van Akkeren, picture editor NRC*, 19 December 2014
- Bates, J. (2013) *Interview James Bates, Creative Director of Clearleft*, 14 February 2013
- Brocklehurst, J. (2013) *Interview Brocklehurst, Lecturer and Researcher*, 23 December 2013
- Coningsby, A. (2013) *Interview Andrew Coningsby, Agent and Owner Debut Art*, 13 February 2013
- Curtis, M. and Lees, N. (2013) *Interview Matt Curtis and Natalie Lees, Art Director and in-House Illustrator, The Times*, 13 February 2013
- Diprose, A. (2013) *Interview Andrew Diprose, Art Director WIRED Magazine and iPad Edition*, 15 February 2013 and 16 February 2015
- Fenton, J. (2013) *Interview James Fenton, Freelance Digital Art Director*, 6 December 2013
- Hoogerbrugge, H. (2012) *Interview Han Hoogerbrugge, Lecturer, Artist and Freelance Illustrator*, 21 December 2012
- Hume, A. (2012) *Interview Andy Hume, Web Architect, Guardian*, 31 October 2012
- Ikink, H. (2012) *Interview Harm Ikink, Freelance Science Writer, Web Journalist and Blogger*, 19 October 2012
- Inngs, S. (2013) *Interview Simon Ings, Art Director, ARC Magazine*, 18 January 2013
- Jennings, N. (2013) *Interview Nicola Jennings, in-House Illustrator Guardian*, 21 December 2013
- Kenyon, M. (2012) *Interview Matt Kenyon, Freelance Illustrator Guardian*, 2 October 2012
- Kisman, M. (2012) *Interview Max Kisman, Freelance Illustrator and Graphic Designer*, 21 December 2012
- Leslie, J. (2013) *Interview Jeremy Leslie, Blogger at Magazine Culture and Art Director*, 14 February 2013
- Marshall, S. (2012) *Interview Sarah Marshall, Freelance Digital Journalist*, 14 December 2012
- Minns, D. (2012) *Interview Dominic Minns, Creative Director Plugin Media*, 23 November 2012
- Nieuwenhuizen, D. (2012) *Interview Dimitri Nieuwenhuizen, Director LUST*, 21 December 2012
- Santos, M. (2013) *Interview Mariana Santos, Visual Designer, Guardian*, 6 December 2013
- Sturt, T. (2012) *Interview Tobias Sturt, Design Manager at Guardian Digital Agency*, 21 December 2012

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