Out of sight: using animation to document perceptual brain states

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Out of Sight: Using animation to document perceptual brain states

by Samantha Moore

a Doctoral Thesis

Submitted in partial fulfilment of the requirements for the award of PhD of Loughborough University

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Contents:

Thesis abstract p 9
Acknowledgements and thanks p 10
List of images and link to animated documents p 12

Prologue p 14

Introduction p 23
Statement of the research p 27

Chapter 1: Research Context p 30
Documentary p 32
Animation p 36
Aural modes in animation p 39
Animated documentary p 41
The indexical trace p 47
Animated documentaries about brain states p 52
Science and art p 60
Neuropsychology p 63

Chapter 2: Definition of terms and distinction of scope p 68
Define key terms p 69
Key roles within this research p 77
Distinction of scope p 80

Chapter 3: Critical context for Practice p 87
The methodological framework p 89
Adapting the methodology for animation p 92
Rationalisation of what it achieves p 94
Contrasting methodologies p 96
Implementation of the methodology

Chapter 4: Practice – developing the collaborative cycle
Developing my own practice methodology
Conceiving the collaborative cycle
Conducting initial research
Conducting secondary research
Devising semi structured interviews
Setting up the collaborative process

Chapter 5: Case studies
Case study: Synaesthesia
Case study: Phantom limb
Case study: Prosopagnosia

Chapter 6: Analysis and reflection
Evaluation of methodology
Reflection on the evolution of the practice

Conclusion
Epilogue
Bibliography

Appendices
Initial questions for Ashok 16th March 2011
Initial questions for Viva 15th November 2010
Initial questions for phantom limb collaborative consultants
Initial questions for prosopagnosia collaborative consultants
Revised questions for prosopagnosia collaborative consultants
Participant information ethics sheets
Correspondence with phantom limb collaborative consultants
Correspondence with prosopagnosia collaborative consultants
Film maker questionnaires p 252
Sophie B Raymond p 255
Tim Webb p 257
Ellie Land p 260
Examples of academic writing p 263

'Does this look right?' Working inside the collaborative frame, paper given at the Animated Realities conference, University of Edinburgh June 2011 p 263


Who said that? The dispensability of original sound in animated documentary. Article on animated documentary for animation 2.0 p 277
Thesis Abstract

It is acknowledged that the genre of animated documentary is particularly suited to depicting the subjective point of view (Wells, 1997, Honess Roe, 2013). It has also been suggested that animated documentary may have a ‘tendency toward collaborative working methods’ (Ward, 2005: 94).

This PhD work explores and expands these suggestions and presents the development of a methodology adapted from what has been termed ‘collaborative ethnography’ (Lassiter, 2005) when using animation to document perceptual brain states. The claim to originality in this thesis lies in the methodological approach taken through the documenting of idiopathic perceptual brain states, previously unrepresented in animation. It involves a shifting of the roles of ‘subject’ and ‘director’ to ‘collaborative consultant’ and ‘facilitator’ respectively, and differentiates between the recording of an animated ‘document’ and the creation of an animated ‘documentary’.

It rejects the sound reliant template of the ‘animated interview’ (Strøm, 2005: 15) as the dominant model of creating animated documents, which assumes both that the indexical is crucial to documenting, and that this can only be achieved in animation through the use of indexical sound. It agrees with Tom Gunning’s argument that Charles Sanders Pierce’s original idea of the index as part of an interconnected triad of signs (index, symbol and icon) has been abstracted from its richer signifying context and extracted a simplified version of what Pierce intended it to mean (a trace or impression left by an object) to become a ‘diminished concept’ (2007:30-1), essentially a short hand coda in this instance for ‘document’. The practice in this work challenges this by presenting an alternative; using a collaborative cycle methodology.
Acknowledgements and thanks

An enormous debt of thanks must be paid to the collaborative consultants; Andy, Claire, David, Stephen, Dave and Pete who gave their time, advice and help without complaint, even when faced with lots of quite peculiar queries. Thank you all for your help and I hope that the process has been interesting, enlightening or even useful.

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Thank you to the filmmakers, Ellie Land, Tim Webb and Sophie B Raymond who kindly answered my impertinent questions about their process, which are included in the appendices of this work and shed light on how an animated documentary methodology is utilised by others.

Thanks to the University of Loughborough for the studentship that allowed me to pursue my studies, and thanks to the University of Wolverhampton (especially the Digital Media staff) for helping to foster and support my research.

Finally, thanks to my husband Jon Bates for always supporting and cheering me, and for giving me the space to develop my work. Also for the whisky, and the chocolate. Thanks (and apologies) to my sons Stanley and Archie, who have had to put up with a certain amount of withdrawal (both physical and mental) from me, but who seem to have survived unscathed nonetheless.
List of images and hyperlinks to animated documents

(1) Still from *Tarantella* (1994)  p 15
(2) Still from *Success with Sweet Peas* (2003)  p 16
(3) Still from *doubled up* (2004)  p 17
(4) Still from the animated document of the note 'G sharp' played on a violin as seen by synaesthete Emma, for the Synaesthesia and Sound project, 2006  p 18
(6) Still from *An Eyeful of Sound* (2010)  p 21
(7) Still from *Particles In Space*, Len Lye 1979  p 49
(10) Still from *The Trouble with Love And Sex*, (2011) Zac Beattie  p 95
(11) Still from Virgin America A320 flight safety video (2007)  p 96
(13) Figure 1, an impression of the feedback dissemination (2011a)  p 107
(14) Figure 2, visual conceptualisation of the cycle (2011b)  p 108
(15) Figures 3a & 3b, visual conceptualisations of the collaborative cycle (2012)  pp 109 - 110
(16) 'Figure V' Ray Pawson (1996: 303)  p 111
(17) Figure 4. The collaborative cycle (2013)  p 113
(18) Image from Dave's final phantom limb sequence  p 124
(19) Still from *An Eyeful of Sound* (2010)  p 126
(20) Still from animated document of Tessa's reaction to a violin note  p 128
(21) Tessa listening to sounds and painting her responses  p 130
(22) Julie's original sketch of the sound of a cockerel crowing and a still from my animated document of it  p 131
(23) Still from animated document of Tessa's synaesthetic reaction to the sound of a balloon deflating  p 132
(24) Emma's drawing of a minute of the mixed sound track  p 133
(26) Still from animated document of Pete's night time anecdote  p 140
(27) Sketch of Dave's enlarging foot experience p 142
(28) Still from animated document of Dave’s foot, still not big enough p 142
(29) Still from animated document of Dave’s enormous foot, created in a compositing package to create a more three dimensional effect p 143
(30) Still from animated document of Stephen's bubbly foot p 145
(31) Still from animated document of prosopagnosia experience, 2013 p 149
(32) Lucas I, (1987), Chuck Close. Painting (254cm x 214.6cm) p 151
(33) Keith / Mezzotint (1972) Chuck Close. Mezzotint on paper sheet (130.8 x 106.7 cm) p 152
(34) Different renderings of Ashok's face p 155
(35) Still from an animated interpretation of a prosopagnosic experience p156
(36) Still from an animated interpretation of a prosopagnosic experience p157
(37) Still from an animated interpretation of a prosopagnosic experience p 157
(38) Still from an animated interpretation of a prosopagnosic experience; Changing angle face (version 3) p 159
(39) Stills from an animated interpretation of a prosopagnosic experience; the 'box face' sequence p160
(40) Still from an animated interpretation of a prosopagnosic experience; the‘cocktail party’ sequence p163
(41) Still from Shadow Stories (2012) p173
(42) Sketch from Loop (2016) p174

To Watch The Online Animated Documents

Follow this link: http://www.samanthamoore.co.uk/#/phd-research/4584811084 and click through to look at the animated clips.

1 If there are any problems accessing the animated documents this way please call Sam Moore 07946064774 or e-mail sam@samanthamoore.co.uk
Prologue

In order to contextualise and explain my thesis this prologue will set forth my previous practice, and the transition that has taken place between my roles as artist and researcher. As my practice has developed into a parallel interest in research it has caused a reflection upon the core concerns of my work, and created tensions in my shift of roles and method of inquiry. This section will record and reflect on my previous practice to date, and will show the necessity for the PhD study which follows. It also reflects the poly-vocal nature of this study in the coalescence of research and practice.

My practice has been categorised into the genre of animated documentary (by funding bodies, film festival programmers, and other researchers) but my key concern has not been in the genre of animated documentary per se, but in a question relating to a larger question that Claire Kitson reputedly regularly posed (whilst she was commissioner of animation at Channel 4 1989-1999, Kennedy 2014:1); 'why use animation for this project?' In my work the key question has arisen about what animation can be used to document, and what qualities animation brings to the documenting process.

My earliest documentary inflected film was *Tarantella* (1994), made as part of my postgraduate diploma student work. It is an auto-ethnographic film combining fairy tale with a monologue, both dealing with father-daughter relationships. It was made using oil paint on glass combined with live action, shot on 16mm film. It was influenced by literary magic realism and Karen Watson's 1988 film *Daddy's Little Bit of Dresden China*, but the

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2 See the Animated Documentary website for evidence of this, <http://animateddocs.wordpress.com/tag/samantha-moore/> accessed 4 June 2012
3 In 1995 I participated in the 'Animator in Residence' scheme for Channel 4 and subsequently had my short narrative fiction oil on glass film (Glasgow Kiss, 1997) commissioned by them. Having applied previously (and rejected) for the scheme, I was very influenced by a key question from Claire Kitson in my initial unsuccessful interview; 'Why should this be animated?' She said that this was the question she always applied to prospective animated projects and increasingly ever since I have found it pivotal in refining and interrogating motivation for making work. Stylistic and aesthetic choices, the fact that the maker's skill set is animation, an affection for the medium; none of these are enough to justify making an animated film - in my practice I aspire for there to be something fundamental about the content that demands the unique attributes that animation can bring.
4 Made at Central Saint Martins and distributed by Cinenova.
5 Magic realism was an influence, especially the work of Gabriel Garcia Marquez (100 years of Solitude, 1967), Isabella Allende (The House of the Spirits, 1986) and Angela Carter (The Bloody Chamber, 1979, Nights at the Circus, 1984).
documentary aspect of the film was intended as a structural device to convey the topics of the work. It followed the now widely used formula for animated documentary of using the soundtrack as the basis for part of the visuals but also used a fairytale as a symbolic counterpoint to the documentary element. Since the film was autobiographical there was not any tension between what was being said and what was represented visually on screen, and icon and symbolic imagery were both used without privileging either.

(1) Still from *Tarantella* (1994)

*Success with Sweet Peas* (2003), was about competitive sweet pea growing in Shropshire. The film was described as 'a poem'\(^6\), which seemed to be an apt description in the absence of any more suitable label, since at that stage it did not occur to me that the film was working in a documentary idiom. It partially used the 'animated interview' genre but the voices were used as musical instruments (utilising repetition, rhythm, pitch and timbre) as well as vehicles for conveying information and were integrated into the overall sound design by Adam Goddard, which blurred the boundary between data and music.

\(^6\) By George Eldred, co director of Aspen Shortsfest, 2004.
It was not until the attempt to get funding for *doubled up* (2004) that my practice was considered in terms of the documentary genre, emboldened in part by the gravitas leant by the scientific element of the work, and the positive encouragement to couch my work in such terms by producers for the *animate!* scheme, Dick Arnall and Maggie Ellis.
doubled up was an auto-ethnographic work, based on my experiences of multiple birth and my subsequent negotiation of the roles of artist and mother, influenced by Mary Kelly's Post Partum Document (1973-9). The documents to base the work on were all to hand and easily mediated; children to interview and record, video footage for rotoscoping, baby books, children’s drawings, my own experiences and memories. Jane Denton, director of the Multiple Births Foundation at Queen Charlotte Hospital in London was my only external interviewee and her voice and perspective were used on the soundtrack to open out the subjective perspective of the work into a scientific and medical realm. The sound was created before the images but, working again with Adam Goddard (sound designer and composer from Success with Sweet Peas), the soundtrack was used for both musical and data-conveying purposes, making the sound much more similar in approach to the visuals which combined iconic imagery with symbolic.

After making this work my practice became more routinely described as being in the documentary genre and I began to explicitly consider how exactly animation documented experience and why it should do so, an evolution of Kitson’s core question ('Why should this be animated?', see above). Leading on from this enquiry I began to be interested in using animation to externally evidence the intensely subjective internal experience. In 2006 I began a collaborative research and development project, Synaesthesia and Sound, with Dr
Jamie Ward, head of the UK Synaesthesia research group and a neuro-psychologist at University College London. As recipients of an arts award from the Wellcome Trust, Dr Ward and I made a project working with the New London Orchestra investigating whether or not synaesthetic reactions to music were innately more appealing to non-synaesthetic people than non-synaesthetic sequences. We interviewed synaesthetic people and recorded their reactions to musical stimuli, then took their descriptions and animated them. These sequences were then used in experiments at the Science Museum, London (as part of their 'Live Science' exhibit) on the general public and we later presented our findings at an evening event at the Dana Centre.

We used a Munsell colour chart to define the exact colour of the experience, the interviewees drew and painted their responses, and they also gave an audio description of the experience, which we recorded. In this way the clip's veracity was authenticated and triangulated. Additionally the animation in progress was sent to the interviewees during the animation process in order to check that it was correct (and amended if not) before the final clip was considered complete.

The animated sequences made for this project were essentially animated documents, made through a collaborative process with the interviewees, showing their synaesthetic responses to particular sounds. Because synaesthesia is experienced differently by each person, the animated clips were documents of their particular synaesthetic experience.
Working with scientists it was notable that they approached the animated clips as authenticated documents and have continued to do so (for example Dr Julia Simner at University of Edinburgh who saw a presentation we did about this project used some of the clips to illustrate her lecture at the Edinburgh International TV festival, August 2013)\(^8\)

This differentiation between document (the clip) and documentary (the film genre) began to emerge in my comprehension of the way that animation can work in a documentary sense.

\[\text{(5) Still from } \textit{The Beloved Ones} \ (2007)\]

\textit{The Beloved Ones} (2007), made for the UK Film Council, was pitched specifically as an animated documentary film, a genre label that was advantageous in obtaining the funding. This film precipitated a decisive moment in my relation to sound in animated documentary when it became clear that the indexical sound recorded (from the field in Uganda) was not going to be able to be used in the final sound edit. The original sound footage was recorded using the built in microphone on a video camera in windy external locations and the sound was very poor quality. The film relies on personal testimony from two women and is predicated on the audience's acceptance of that testimony as a truthful document of the women's experience. Ultimately we cut and replace the edited original field-recorded sound

\(^8\) See <http://www.audionetwork.com/content/whats-new/events/synaesthesia> accessed 29th September 2013
with a re-reading of the words by actors, a decision that made me query and challenge the role and purpose of indexical sound in animated documentary (further explored in this study).

In 2010 I completed *An Eyeful of Sound*, about audio-visual synaesthesia, based on the previous research and development work (*Synaesthesia and Sound*, 2006) I had done with Jamie Ward. That work was the genesis of this PhD study. In the completed film the central premise was that the translated synaesthetic experience should be as authentic as possible, so dialogue and co-operation between participants in the film became very important. If the animation was going to claim to be able to translate unique perceptual processing into external images then there had to be a robust system of feedback. Evidencing the veracity of the material was key to the film's integrity, and unlike the subjective perspectives in *Tarantella* and *doubled up*, the film maker was not the subject of the film. In order to claim any substance for the reliability of the images we had to endeavour to make the animated representation of the synaesthetic reaction as close as possible to the original experience.

The way that the animated documents were recorded and authenticated was very similar to the process used in 'Synaesthesia and Sound' (our 2006 R&D study, see above).

'The beginning is fine, but really it would be better just to have a thick white cloud moving continuously from left to right with the little silvery things as they are. It is the flower-like images which are wrong. What is the final sound of silver? It looks like a very thin vertical pole. Black balls are not there in the music at all!'

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9 Commissioned by the Wellcome Trust. Winner of three international awards including one from the journal Nature for 'scientific merit' (Imagine Film Festival, New York, 2010)

10 Roxburgh, J. *An Eyeful of Sound* [e-mail]. Personal communication, June 2009.
During and after the making of An Eyeful of Sound my role began to circumvolve from film maker to researcher. This was a way of exploring broader concerns about the document, indexicality, and methodology than could be addressed through the film making process itself. The research has arisen from an organic expansion of academic engagement about the synaesthesia work via conferences about synaesthesia, documentary film, data visualisation and animation studies. Each different disciplinary area explored a different aspect of the work, but none of the areas addressed my analysis of the way in which animation can be used to document, and so my interest in a multi faceted examination led to the development of this PhD study. For the purposes of this research I site myself as 'a researcher' rather than 'a film maker', working with documents not documentaries.

\[11\] An Eyeful of Sound: animating audio-visual synaesthesia UK Synaesthesia Association conference Sussex 2010,
Getting the picture: Digitally visualizing and animating synesthesia American Synesthesia Association conference,
Vanderbilt University 2010

\[12\] An Eyeful of Sound: a case study Visible Evidence documentary studies conference Istanbul 2010

\[13\] An Eyeful of Sound: Using animation to document the unique brain state of synaesthesia Making visible the Invisible data visualization conference, Huddersfield 2011

\[14\] Animated realities: Animated documentary and "psychorealism" Society for Animation Studies conference,
Edinburgh 2010
Samantha Moore

Out of Sight: Using animation to document perceptual brain states
Introduction

"Your looks are laughable,
Unphotographable,
Yet you’re my favourite work of art…”¹⁵
- Rodgers and Hart

The research question

This is a practice based PhD encompassing animation practice and a thesis. The central investigation deals with how animation can be used to document perceptual, internal states in a way that retains the ‘authenticity’ of the referent, through a methodology which presents an original set of criteria by which to interrogate these under represented perceptual states. It proposes a more balanced view of how this might be done other than solely through aural indexicality. By investigating these concerns it is not seeking to 'prove' that animation is the best vehicle by which to document brain states. Instead the practice of documenting subjectively experienced brain states through an explicitly collaborative methodology will be used as a way to interrogate the boundaries of broader issues about how animation can document. For this reason the practice is not couched in terms of (documentary) 'film/s' but a series of documents or clips which have gone through the assessment of a collaborative process.

The methodology proposed

The type of practice led research used in this study is based on a small-scale collaboratively ethnographic approach interviewing subjects who either have, or are researching, the brain states chosen. Working collaboratively is key to the central theory about how animated documentary can work in the context of 'authentically' documenting interior brain states. The term 'subject' itself is A broader interpretation is suggested in the way the referent is alluded to, rather than just the aural indexical link. This allows the 'collaborative cycle' (proposed in chapter four) to use all the tools at animation's disposal to document the perceptual states chosen. Paul Ward talks about how interactive and collaborative methods

¹⁵ Rodgers and Hart, 1937 My Funny Valentine from the musical Babes in Arms.
in animated documentaries 'push back the boundaries of documentary signification' (2005: 96) and I suggest that this is one of the meaningful ways it can be done. The methodology will take its cue from recent work on 'collaborative ethnography', crucial to which is the work of Luke Eric Lassiter at the University of Chicago (2005), which I will develop into the practical application of my thesis. This way of working also impacts upon traditional roles within animation (such as the authorial role of director, animator, film-maker) and changes the dynamic between this and the other collaborating parties, so that the tools available for working in this way are inevitably reshaped (this is discussed further in chapter two).

Expansion of the main points of my thesis

Animated documentary has coalesced as a genre and become part of a set of debates and definitions with many inflections, and this study inhabits that domain. However, this thesis moves on from a reiteration of this and does not engage with the principle of proving or disproving animated documentary per se, instead investigating what constitutes a piece of documentary evidence in animation. This PhD will take a specific area that animated documentary is universally agreed to represent well: describing the internal (variously described as the subjective (Wells, 1997: 42), penetrative (Wells, 1998: 122) expressive (Honess Roe, 2009) or evocative (Honess Roe, 2013: 25) mode). It will use specific perceptual brain states as the referents to be represented in order to interrogate the potential of using animation as a way of documenting.

Previous approaches to animated documentary rely heavily for documentary status on aural indexicality (discussed further in chapter one), and provide a visual interpretation irrevocably linked to the sound, the 'animated interview' model (Strøm, 2005: 15). This is not problematic for this practice but it is not relevant to what is being investigated here. The 'animated interview' locates its claim for indexicality solely in the soundtrack, but for my purposes this is an insufficient sign for indexicality. As a result I am treating the whole mode of signs differently, as part of a fluid set of definitions, to serve the evidence in my thesis. I want to refer to the pioneering work of Peter Wollen, as his 1969 work on semiotics in cinema is particularly pertinent to my argument about the balance of signs in using animation to document. I am recasting the role of animator away from a visual interpreter of the fixed (indexical) soundtrack into a translator of the collaborative
discussion with the 'subjects' of the film. This involves a change in role from 'director' to 'facilitator' of the documenting process.

Overview of the chapters

In chapter one the research context for the study will be examined in more detail, ranging from documentary and animation to the intersection between science and art, and the role that neuropsychology plays in this study. It will look at aural modes in animation and the way that the indexical trace is dealt with in documentary and animated documentary research. Through exploring contemporary debates about what kind of approaches to non-fiction can uniquely be applied through animation I shall look at what these debates reveal about the emerging theory around this genre, particularly in relation to sound.

Chapter two defines key terms and roles used within this study, some of which are used in subject specific ways, and delineates the scope and boundaries of the work. It also proposes new roles and terms which can be helpfully used in elucidating how exactly animation can be specifically used to document, rather than to function within documentary.

Chapter three looks in detail at the methodology and the ways in which the collaborative ethnography has been adapted for use in animation practice. It takes a comparative view of contrasting methodological approaches to creating work with the animated documentary genre, and relates this back to issues about ways of adequately reflecting the referent.

Chapter four explains how the methodology will be implemented in practice, the development of the 'collaborative cycle' and describes the structures chosen to accomplish it. It also discusses the integral evaluative component of the process which allows the people whose experience is being represented to authenticate the animated documents.

Chapter five presents the practice case studies including a completed film (An Eyeful of Sound, 2010, made prior to this study) for reference and because it is pertinent to the development of this methodology. The other two case studies are a selection of documents made to represent two abstruse perceptual states, prosopagnosia (face blindness) and phantom limb syndrome, in collaboration with the people who experience them and with the help of the scientists who research them.

Chapter six is an opportunity to make an evaluative reflection on the work presented, how the methodology worked and the findings of the study. Since this study is about the
animated documents, not the documentary film itself, this chapter also discusses the potential evolution of the process and the roles involved.
Statement of the research: Using animation to document perceptual brain states

The suggestion of this work is that in certain situations animation can bridge the gap between 'the world' and 'my world' in a rounded and fulfilling way by creating a document of a perceptual brain state, an animated document evidencing the unphotographable 'world in here' (Honess Roe, 2013: 106).

The thesis is that this can be done through an explicitly collaborative methodology, based on parity between collaborative partners, in the creation of the animated document. It is supported by restoring balance to the presentation of evidence of the referent, rather than privileging just one element of the sign (for example indexicality) to communicate an authenticated animated document.

The aim of this thesis is to make a series of animated clips and evaluate them using the collaborative methodology proposed. By doing so this work will suggest that not only documentary (a moving image genre construction using sound and image based on fact from various sources) but also a document (a tangible piece of 'evidence' of fact, regardless of medium, which relates directly to its source) can be produced, and this study will concentrate on the latter. Document and documentary are inevitably intertwined, but whilst a documentary cannot exist without documents, a document can stand alone. The same distinction can be made between unedited ('raw') live action film footage rather than with the construction of 'a film'. This is not to say that an animated document is similar in form to a piece of raw footage, but when produced using the suggested methodology an animated document can have as much status as a document as any other; such as live action footage, a letter or a recorded aural recollection. Using this methodology the success of the animated clips in documenting the internally experienced state can only be judged by

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16 'the world' which documentary represents, as opposed 'a world' of fiction (Nichols, 1991:109)
17 '(of films, TV programmes, etc.)aiming at presenting reality, presenting facts not fiction' (Chambers Dictionary, 11th ed. 2008: 454)
18 'n. a paper, esp of an official character, affording information, proof or evidence of anything' (Chambers Dictionary, 11th ed. 2008: 454)
the subjects of the document themselves, so the methodology developed here embodies the means of evaluating its own effectiveness. The purpose of this study is to define and create animated documents which reflect the internal experience of the interviewees, by the criteria that the interviewees themselves set, and implemented via a process of rolling collaborative feedback (the collaborative cycle). By giving the ‘subjects’ or ‘collaborative consultants’ the power to authenticate the data the role of director / animator correspondingly metamorphoses to that of ‘facilitator’ (see chapter two for clarification of these roles).

The model that is proposed in this study retains the emphasis of the visual over the aural used more conventionally in animation generally (Wells, B., 2011: 15), rather than the one of aural over visual used in live action documentary (Nichols, 1991: 20) and which the illustrative style of ‘animated interview’ (see Strøm) documentary has also tended to adopt in its claim for documentary status. This reliance on sound in the ‘animated interview’ film to provide the indexical link means that the visual is relegated to a supporting role for the soundtrack, simultaneously isolating and privileging the spoken testimony as ‘the document’. The visuals therefore become symbolic repositories for the words, inextricably linked to a language based coda19. Wollen says of the symbolic that it ‘demands neither resemblance to its object nor an existential bond with it. It is conventional and has the force of a law’ (1969: 103) and that visual shorthand makes perfect sense when coupled with an explanatory soundtrack (see the RSA videos). In this study though the visual animated document claims status as documentary material, with equal validity to the indexical sound document, and therefore the potential films made from these documents are not restricted to using a sound-dominant model. This study propose to take a more equally balanced interpretation of the referent; using icon, index and symbol more evenly, grounded in the collaborative methodology and not the sound.

19 For example Andy Glynne’s Animated Minds series (2009) with titles like ‘Fish on a hook’, ‘The Light Bulb Thing’ and ‘An Alien in the Playground’ use powerful symbolism grounded in the recorded conversations with subjects to convey the problems associated with mental health problems.
Chapter 1: Research Context

'Reality is a product of the most august imagination'
- Wallace Stevens

Introduction

This chapter takes an overview of the current debates in the subject areas which this practice and thesis touch on. It summarises discussion in the various areas as they relate to the focus of this study. This context is intended to make clear the development of the ideas and practice in animation used in a documentary setting posited in later chapters and to make clear the need for clarification which this study intends to address.

The literature that informs this PhD simultaneously encompasses very broad-ranging and very narrow fields. The cross disciplinary nature of this study is self evident, and the subject areas which it relates to are diverse. This work does not propose to engage critically with all fields touched upon but will choose pertinent elements which link the area of this study and use them as effective tools to investigate the thesis. The audience for this study is the animation research community.

In his seminal 60s text Peter Wollen says about film;

'The cinema is not simply a new art; it is also an art which combines and incorporates others, which operates on different sensory bands, different channels, using different codes and modes of expression.' (1969: 1-3).

Animation used to document is a similarly mixed bag, incorporating and inflecting elements from a very wide set of influences. Therefore the research context for this thesis will include

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Wollen describes cinema emerging not only from magic lanterns, daguerreotypes, phenakistoscopes and so forth 'but also out of strip-cartoons, Wild West shows, automata, pulp novels, barnstorming melodramas, magic' (1969: 132). Interestingly almost all the seminal techniques and genres he cites could be applied to animation perhaps more exactly than to cinema in general.
texts around documentary studies, animation and sound but will also stray into neuropsychology, neuroscience and combining art with science.
The 'pale reflection'

Documentary: How it relates to animation

'The documentary idea, after all, demands no more than that the affairs of our time shall be brought to the screen in any fashion which strikes the imagination and makes observation a little richer than it was.' (Grierson cited in Hardy, 1946: 18-19)

Like his widely quoted original definition of the definition of documentary (as the 'creative treatment of actuality\(^{21}\)'), John Grierson's description of the documentary here is as open to interpretation. 'In any fashion which strikes the imagination' implies an openness to the treatment of documentary at odds with the indexical rigidity with which it can be viewed today. Dave Saunders describes documentary as comprising 'a vast, diverse and non-linear matrix of films not easily given to precise genealogical or evolutionary explication' (2010: 3).

Michael Renov, too, takes a more nuanced view of documentary's relationship with fiction than Nichols' pejorative 'illusionist medium of entertainment' (1991: 4). Renov does not consider documentary and fiction films to be polar opposites since both use similar methods and devices to appeal to the audience. In fact he says that 'the two domains inhabit each other' (1993: 3), in a foreshadowing of Honess Roe's description of animation and documentary mutually utilising each other. Renov's view is of interest to the animated documentary theorist because of his interest in the pleasure and poetics of documentary. 'The pleasures of non-fiction are every bit as complex as those which have been attributed to fictional forms and far less understood' (1993: 6). Renov acknowledges that creating a documentary is still a creative process even though it is non-fiction; it is still a construct in every choice that is made along the way. He concedes that taking information out of cultural context is a kind of violence which also raises issues of the adequacies of representation standing in for 'lived experience' (1993: 7). This thesis argues that by default taking data out of personal context (for example, aurally recording an interviewee's recounting of an experience and then applying the film maker's own visuals without further consultation with the interviewee on how those visuals should represent their lived

\(^{21}\) John Grierson, famously defining the new genre in his review of *Moana*, New York Sun, 1926.
experience) also raises issues of representation. The methodology of this PhD practice attempts to counter what Renov describes as the 'violence' of de-contextualisation by re-contextualising the subject's experience through a collaborative cycle dialogue and negotiation between 'subject' (or 'collaborative consultant') and film maker (or 'facilitator'); see 'Key roles within this research', Chapter Two). In this way the 'lived experience' can be replaced into the visual materiality of the film. Renov sees the fictional as inextricably linked with the documentary genre; 'every documentary representation depends on its own detour from the real' (1993: 7) which allows the form of animation to be considered on equal terms with live action.

We may consider the broader term of 'non fiction' being a more helpful one in allowing us to evaluate the boundaries of what we mean by documentary film making, particularly when animation is used. Animation has a long history in the field of public information films, science illustration and data visualisation. Boon, though, talks about 'non-fiction' as a term though being 'ambiguous, first in the pedantic sense that many factual films use fictional scenarios and, more philosophically, because nothing absolute separates pure fiction from the construct narrative of factual films - there is a continuum' (2008: 1). This relates to documentary being a genre, rather than a form; as Nichols says, documentary 'as a concept or practice occupies no fixed territory' (1991: 12).

However, as quickly as we can see a place for animation opening up within unfixed territory of the documentary genre, an emphasis on indexicality shuts it out. Documentary has been seen, particularly by theorists like Nichols, as irrefutably linked to the indexical bond bearing the 'palpable trace' (1993: 29) of profilmic evidence and serious authenticity. 'There is, indeed, a distinctive bond between a photographic image and that of which it is a record' (Nichols, 1991: 5). Nichols sets a great deal of store by indexicality of image in the documentary form, which would seem to preclude animation from ever being allowed into the non-fiction realm at all on his terms at least. Nichols' view is driven by his perspective of documentary and fiction being polarised in their intent; he says that essentially 'documentary films appear as pale reflections of the dominant, instrumental discourses in our society [i.e. fiction features]' (1991: 4), and if that is so then animation - the most fictional of forms - cannot be seen as an impartial form to be utilised.

Rozenkrantz claims;
'If the potency of a documentary's truth claim is relative to the documents that constitute it, the animated documentary is significantly weakened by its lack of the fundamental evidential ingredient that is traditionally associated with documentary film: the photographic raw material. This is a problem that the 'defensive' discourse of animated documentary fails to acknowledge, arguing instead that every documentary is a construct and that, consequently, animated documentaries are just as 'real' as live-action ones.' (2011)

He makes a good point about the 'defensive discourse' of animated documentary (and this discourse is almost exclusively argued by animation theorists, as Honess Roe points out, and rarely documentary ones). However, the discourse itself is both broader and more nuanced than just arguing that since all film is constructed, animated documentary may just as well be used as any other approach (for example documentary games, or drama documentary). More importantly the fundamental lack of indexical image which animation displays is far from debilitating as Rosenkrantz and Nichols both claim. Nichols says that documentaries risk their very credibility by 're-enacting an event: the special indexical bond between image and historical referent is ruptured' (1991: 21). This veneration of the 'special' bond privileges the index beyond its capacity for meaning. The rupture actually takes place between the index and the other referents; when taken out of the triadic context the index becomes frozen and fossilised. Bazin compared the indexical (photographic) image to the process of embalming, 'to snatch it from the flow of time' (1967: 9) and Benjamin said that it is 'no accident that the portrait was the focal point of early photography. The cult of remembrance of loved ones, absent or dead, offers a last refuge for the cult value of the picture.' (1955: 219). Wollen claims that whilst Peirce's definitions are the basis for semiology it is important to note that he did not consider any of them to be mutually exclusive, 'On the contrary, all three aspects frequently - or, he sometimes suggests, invariably - overlap and are co-present' (1969:103). Wollen says that it is only by considering all three aspects of these signs equally in cinema that we can truly understand its aesthetic effect (1969: 121), 'there is no need for one to eliminate the other' (1969: 132). This study intends to show that this is the case with animated documents; the signs can be used in conjunction with each other and not singled out, as Wollen says,

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22 Games such as Survivor 911, Medal of Honour or JFK: Re-loaded which use specific documentary settings and scenarios (Fullerton, 2006).
'It is quite misleading to validate one aspect of the cinema unilaterally at the expense of all the others. There is no pure cinema, grounded on a single essence, hermetically sealed from contamination.' (ibid)
'Contradictory concepts'

Animation: How it challenges documentary

Animation is a form that is both fêted for and hog-tied by the spectacle which it creates. Its visual impact is so overwhelming that an understanding of animation can become distracted and inhibited by the skilfulness and craft with which it is created (Wells: 1998). It is often defined in its relationship to live action film, whereas live action may be seen as a neutral starting point from which many different types of genre possibility may arise, animation, by its very form, is seen as being fundamentally biased towards children. Paul Wells talks about the model introduced by Disney inhibiting its acceptance as anything other than children’s entertainment, ghettoising the form from early on (1998:3). If live action is for adults then animation is for children, forced into a generational dichotomy from whose stranglehold it has struggled to escape. Even now, animation is tentative about asserting itself as ‘an artpform in its own right’ (Carels, 2006: 4) after more than a century of existence.

Animation appears to be the opposite of documentary, which eschews the spectacle (the unreal, constructed and non-serious) and strives to reveal the unspectacular 'real' (serious, authentic, apparently un-constructed). According to Esther Leslie, the principle of animation is obliteration (2002: 33); she describes animation establishing a cycle of life and destruction, in order to constantly reassert 'the principle of motion, of continuation and renewal' (2002: 2). Animation is temporary, fleeting, a perpetual game of 'chinese whispers'. Animation is a medium that is constantly reinventing itself and its parameters. To this extent at least animation can be compared with the documentary genre, which agonises over the same relentless reinvention.

There are other similarities between animation and documentary too, though, mainly in the ways in which both relate to the culturally dominant form of live action narrative fiction drama films. Non-fiction film making is by definition not fiction film making, and as with animation many of the arguments about what documentary is instead focus in on what it is not. Nichols ruefully regards documentary as supplementary to the dominant form of narrative fiction film making (1991: 4). However he argues that fiction’s main failing is that it
must always deal indirectly with an issue or problem and therefore 'the discourse must ricochet off this image based, illusionist medium of entertainment' (ibid). He claims that fiction is 'a world', whereas documentary is 'the world' (1991: 109), staking his claim on our mutually agreed understanding of reality (more about this later). Nichols view that the indexicality of the image allows an unruptured connection to be made between profilmic event and documentary's credibility to represent the real (1991: 21) makes him deeply uncomfortable with the idea of mediating that image through a re-enactment or a re-presentation of reality. Here he is talking about docu-drama but the point applies equally well to using animation in a documentary genre. He asserts that realism 'provides unproblematic access to the world through traditional physical representation and the untroubled transference of psychological states from character to viewer' (1991: 57), but this is all highly debatable - what is the world? How is the psychological state transferred? In what sense is that untroubled? None of these issues can possibly be 'unproblematic'. Contrast this with Honess Roe's 'the world in here' which immediately positions itself as entirely subjective; 'my world' which one cannot possibly assume is the same as 'your world'.

Wells describes animation 'as a film language and film art is a more sophisticated and flexible medium than live-action film, and thus offers a greater opportunity for film-makers to be more imaginative and less conservative' (1998: 6). Compare this with Benjamin description of film's 'unique faculty to express by natural means and with incomparable persuasiveness all that is fairytale, marvellous, supernatural' (1955: 221) which seems to describe animation particularly aptly, and Lev Manovich's claim that live action cinema is merely an episode in the history of animation; 'Born from animation, cinema pushed animation to its boundary, only to become one particular case of animation in the end' (1999: 4) seems plausible. But for the documentary genre the unlimited expansiveness of animation's capability is what precludes its ability to rigorously present the 'real', and the nonexistence of boundaries, coupled with an intrinsic un-seriousness linked to animation's association with children, make for an uncomfortable fit. Indeed, Beige Luciano-Adams describes the issue of animation in documentary as being 'dropped on the doorstep of the industry like an abandoned, magical child that refuses to be ignored' (2009), highlighting not only the childishness and fabulousness of animation, but its unsolicited intrusion into documentary.
Aural modes in animation

Animation is primarily defined by its visuals and relies far less on the aural - if you watch a silent animated film it is immediately clear which form you are looking at (Wells, 2011: 15). Documentary relies more heavily than fiction on the spoken word; as Nichols points out it is hard to watch a silent (live action) documentary and still grasp the meaning (1991: 20) because the context and meaning mainly comes from the sound track.

Sound is a key component of the animated work; it 'initiates, assists and extends its expressive tools' (Coyle, 2010:1) in what is otherwise the 'intrinsic silence of the animated film' (Wells, 2010:21). Philip Brophy talks about the symbiotic nature of the organic form of sound fused with the artificial life force of animation; animation is 'separate images ... combined with continuous sound' (1991:74). Brophy sees live action as animism, as opposed to animation's dynamism; oppositional drives in film and dealing with sound in fundamentally different ways,

'...the cinematographer and the animator, the former dealing with real time and the latter trading in artificial time, the former accepting or co ordinating the inherent and manifest rhythm of the action being photographed and the latter engineering, producing and orchestrating rhythms in order to make action happen' (ibid).

Despite this purported integral enlivening of the medium Rebecca Coyle suggests that sound in animation is marginalised in favour of interest in style & aesthetics. She sees music in animation as taking the function of location sound, by encouraging the flow of narrative, continuity and even aesthetic contribution (2010: 8).

In animation sound can be literal or 'the provocateur of memory, arousal, fear, comfort, and a host of other emotions' (Wells, 2007: 43). Wells describes sound as the chief engine of storytelling in animation, and breaks down the types of sound in animation as diatomic, non-diatomic (both of which are necessarily constructed in animated film making), lyrics interpreted literally, and descriptive music. Music can be used as an underscoring of gags
and narrative, for example in post-war North American cartoons\(^\text{23}\) (ibid), emphasising the importance of comedic emphasis in those works. Wells describes the role of music establishing a synergetic relationship between sound and image in the work of Halas and Batchelor (2010: 58), privileging 'a relationship with the choreographic principles of the animation' (2010: 44). In modern film, particularly CGI ones where the pursuit of the 'real' in visual terms seems paramount, Coyle quotes Stephen Deutsch as saying that the soundtracks owe more to live action features than they do to cartoon music, (2010:13).

Coyle discusses the way that sound can allow animation to be released from realism via anthropomorphism (2010: 13-14), although this very mutability works against animation in the documentary genre leading to a sometimes rigid adherence to the model of 'illustrated radio interview' (Driessen, 2007). In animated documentary sound is often used to anchor animation in the documentary genre, using the 'animated interview' mode (see Strøm); essentially taking an indexically recorded soundtrack and animating to it. In some ways this mode has become a definitive one for animated documentary because of the way that animation has negotiated its claim on the documentary genre, however during this study I hope to expand that model. Accepting the 'animated interview' as a default template for the genre limits the power of the visual in being able to claim status as a document itself, misrepresenting the role of the visuals to merely illustrate in service of the aural.

\(^{23}\) Brophy describes Disney as more 'symphonic' and Warner Brothers / MGM as more 'cacophonic' (1991: 86-112)
Animated documentary

'Mutual utilisation'; how animated documentary has been discussed

Using animation to make documentary is sometimes seen as an inappropriate pairing. Jonathan Rozenkranz talks about 'the contradictory concepts' (2011) of animated documentary which assume that animation and documentary are related by their opposition. Jeffrey Skoller deprecates the old fashioned idea that 'documentary and animation genres defined the lines between fact and fiction' (2011:207) yet simultaneously draws an equivalence between the two by labelling both as genres. This comparison is not like with like; one is a form, the other is a genre (Strøm, 2003: 48), so by presenting animation as a genre Skoller limits the qualities that it provides; to the imaginative, fantastical and inevitably-fictional. Honess Roe argues that animation and documentary are not polar opposites, just extremely incongruous when used together. The development of the pairing of animation and documentary, she argues, knowingly plays on that incongruity to pointed effect;

'Animation is used to veil the true meaning of a political film, because documentary is traditionally considered to connect directly to reality. Animation is used to clarify and explain because diagrams and drawings can help us dissect the meaning of objects and concepts we encounter in the real world as well as solve abstract problems that cannot be represented in live action images. The different ways these two incongruous elements, animation and documentary, are combined goes to make up the rich, nonlinear network of a history of their mutual utilisation.' (2009: 89).

There is a rich history of animation being extensively utilised, often as an animated segment within a live action documentary setting to provide 'linear succession and continuity' (Reichert in Hediger & Vonderau, 2009:284) and 'to reduce complexity' (ibid: 288), far more often than it has been the form chosen to convey the whole film. There is also a parallel but less prevalent development of animated documentary, a sub-genre where animation is the main form of the film, which has been widely recognised and broadly

24 Skoller does question the genre status of animation but again does so as a direct equivalent of documentary; 'Whether or not documentary and animation are even genres is arguable.' (2011: 214)
accepted. The development of this sub-genre could be seen to be a natural extension and development of the documentary genre (as DelGaudio argues, see below). Nichols, indeed, allows that documentary as a genre inhabits no specific territory (1991: 12) and David Bordwell admits that ‘we don’t need photographic recording of actual events to count a film as a documentary’ (2009) so perhaps this elasticity of boundaries may allow animation to move eventually ‘from inconsequential anomaly to transformative innovation to accepted practice’ as Nichols acknowledges other documentary modes already have (1991: 15).

So there is a thinly populated but long-standing history of animated documentary (Saunders: 2010, p 167), but a patchier history of animated documentary theory. Gunnar Strøm in his 2003 article pointed out that the animated documentary had been largely overlooked in the previous twenty years of animation theory (2003: 48). Determining what exactly the functions and modes of animated documentary are is something that has been attempted sporadically over the past fifteen years as the area has slowly developed from eccentric aberrations into a recognisable - if contested - genre. Otto Alder, curator at the Leipzig Dok festival of documentary and animated film (founded in 1955), was instrumental in the definition of the emerging genre. He began a programme of what he called 'animadocs' in 1997 drawing parallels between Leipzig Dok festival’s two featured methods of film making (the genre of documentary and the form of animation). This animadoc strand in the film festival has prospered, inspiring debate and thinking around the area. In 2008 the festival programmed a retrospective of animated documentaries from the past 30 years25, signalling how the genre had developed and gained a level of mainstream acceptance in the intervening decade, and in 2013 introduced the 'Golden Dove' which is a prestigious prize for the best animated documentary. Paul Wells in a 1997 article posited modes where animated documentary may operate; the imitative, the subjective, the fantastic and the post-modern. In the same year Sybil DelGaudio also investigated this novel area, seeing the animated documentary as part of an organic tradition of documentary expanding and exceeding its own boundaries (1997: 189). A similar view was taken in the 2011 edition of Animation: An interdisciplinary journal entitled Making It (Un)real: Contemporary Theories and Practices in Documentary Animation. It provided debate on the role of

animation/documentary fusion which was presented from a variety of sources both within and outside the field of animation research. The recurring areas of concern, though, seemed to centre on anxiety about the status of documentary and how using animation within it highlights this (for example the mutable status of 'the documentary guarantee' in a digital world, Takahashi, 2011:231) rather than identifying what animation can specifically bring to the documentary genre. There is an assumption that all documents must come from outside the animated realm (which is itself equated with fiction). Although Skoller suggests updating the view that documentary and animation sit on either side of the fact/fiction boundary, his introduction reinforces it by presenting the indexical photographic trace and 'documentary evidence' as synonymous and in binary opposition to the 'speculative imaginings' that animation can provide (2011:207). This perspective denies animation's capacity to create and use documents. His argument echoes a familiar one (see DelGaudio) that since documentary is a fluid genre then animation may as well be as much a part of it as any other hybridised documentary form (drama, theatre, computer games, gallery film installation, web based art) (2011:208). This argument could be used to rationalise why any number of forms be used in a documentary context, but does not explain why animation might be able to create and utilise animated documents, which provide their own 'documentary guarantee'.

Paul Wells has argued that the phrase 'animated documentary' has become a portmanteau phrase encompassing too much, and suggests that 'animated non-fiction' is a more useful and forgiving term of reference. 'Animated documentary' status is often a self-selected description, but not enough thought has gone into what animated documentary might really mean to an expanded exploration of documentary. Michael Renov was one of the few documentary theorists approaching the subject when he gave a paper at the Visible Evidence conference entitled 'Animation: Documentary's Imaginary Signifier', arguing that animation actually does something fundamentally different to live action documentary when it offers 'the viewer an artefact that stirs the imagination or evokes reality' rather than just re-presenting reality (2002:3). As mentioned (see documentary chapter) Honess Roe points out (2009: 2) that to date there are only two documentary theorists who have published serious work on the subject of animated documentary; everything else has come

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26 He argued this during his key note talk at the Animated Realities conference, Edinburgh School of Art, June 2011.
from the animation field, pointing to an imbalance in the status of the genre across disciplines.

Strøm (2003) placed the animated documentary in one of Nichols' (1994: 93) expanded modes; the 'performative', essentially more concerned with form than content. Bella Honess Roe describes her breakdown of animated documentary modes; mimetic, non-mimetic (substitutive) and interpretive in her 2009 PhD dissertation. Determining such modes is a relevant part of defining what the function is that the animated documentary performs, and of giving the genre a broader credibility. However one of the problems with identifying modes within animated documentary is that because animation has such an incredibly diverse range of outputs (aesthetically, aurally and structurally) those modes must be endlessly mutable. One of Honess Roe's criteria for determining whether or not a film is an animated documentary is that it is presented or received as such; she cites Paul Ward arguing that the active viewer makes this choice (Ward: 2005: 30), and this then allows even more diversity in the material to study. Ward himself, in his 2005 book, wrote a chapter about animated documentary which reiterated the usefulness of Wells' modes up to a point, especially in regard to the subjective mode (2005: 81-99). However, he warns against making too concrete a set of definitions since many of the modes by necessity overlap and even co-exist in the same film. Kees Driessen in 2007 identified several different types of animated documentary; many of which overlap with each other (the illustrated radio documentary and the animated interview, for example).

Animation has been used in the 'expositive and illustrative' mode; to visualise abstract technical or scientific concepts since the very start of film history, from Alexander Shiryaev's 'paper film' recordings of his dance choreography for the Russian ballet (pre-1906) (2009: 301-310), to the digital animation used in documentary series such as Wonders of the Universe (BBC, 2011). In this mode animation can visually simplify and explain to an audience in a similar way to a text book illustration, a version of what Bill Nichols (1991: 34) calls the 'expository' mode of documentary, with the images intended to educate and inform the audience.

Animation has also been used to perform a 'mimetic substitution' (Honess Roe, 2009) in non-fiction; to represent lost or non-existent footage. For example Winsor McCay's drawn animation The Sinking of the Lusitania (1918) which was screened as part of contemporary newsreels in the absence of live action footage of the event, or Walking with Dinosaurs.
(1999) which was presented in a documentary format as if the events depicted were profilmic. Both *Walking with Dinosaurs* and *The Sinking of the Lusitania* was heavily contextualised with live action documentary material when the work was originally screened. *Walking with Dinosaurs* with 'Making of.. 'programmes emphasising the series' credibility both as a scientifically authentic work and as ground-breaking CGI animation. Similarly McCay's dedication was alluded to in the live action documentary clips bookending the film when it was first screened in newsreels (Esther Leslie describes his shunning of labour saving devices, such as using cels, backgrounds etc., in making the 25,000 drawings that made up the film, which added to the impression of painstakingly authentic work, 2002: 12-13). Perhaps the mimetic substitution mode requires, or at least benefits from, external (live action) verification of its 'authentic' credentials. Renov makes the point that 'indexicality and commodification remain historically linked' (1993: 8) so the cultural and economic value of the image is dependent on how real it appears whatever the cultural connotation prevailing at the time (for example the Rodney King footage). Benjamin compares the painter to a magician and the camera operator to a surgeon, with the painter keeping a distance from the subjects whilst the camera operator penetrates deeply. The pictures they capture are vastly different; the painter makes 'a total one' whilst the camera operator collects fragments which are presented sequentially. 'Thus, for contemporary man the representation of reality by the film is incomparably more significant than that of the painter, since it offers, precisely because of the thoroughgoing permeation of reality with mechanical equipment, an aspect of reality which is free of all equipment.' (1955: 226-7).

The behind the scenes (live action) imagery of the manipulation of complex CGI software, or McCay's technical feat of creating so many drawn frames, performs the distancing function that mechanisation creates and suggests an objectivity towards the material; a scientific, technical eye rather than a partial, authorial hand.

Animation can also be used in a non-fiction sense to detail an internal perspective, the 'subjective mode' (see Wells). Tim Webb's film *A is for Autism* (1992), for example, was described as being made ‘collaboratively’ with the autistic subjects of the film, conveying a set of personal experiences. Here the medium is used for its ability to show the world from an intensely subjective perspective not using photo-realism but taking advantage of

27 Although ironically the live action 'mini-documentary about how and why it was made' (Canemaker, 1987: 195) sequence accompanying the film was staged and included an animation crew who actually had not worked on the film (ibid).
animation's ability to utilise different styles and types of animation including hand drawn and stop motion. This mode could be interpreted as parallel to Nichols' self conscious 'reflexive mode'; an example of which might be a docudrama, using tropes from other genres and forms to comment on the documentary subject itself. However Nichols is clearly uncomfortable with the reflexive mode's ability to represent with a tenuous (or even severed) indexical link; 'Their representativeness … becomes more problematic as we recognise the extent to which we see a constructed image rather than a slice of reality' (1991: 57). Paul Ward (2005: 91) argues though that animation is particularly good at representing the internal and subjective in the documentary genre, it 'can perfectly trace the contours of … a shifting and rapidly condensed thought process in a way that is out of reach for live action'. Bella Honess Roe refines her third mode of animated documentary from 'interpretive' (2009: 21) to 'evocation' (2013:25) a shift in terms that seems to exchange emphasis from an analytical representation to a perceptual one.

These modes are a broadly useful taxonomy of the forms that the genre of animated documentary can take but they do not engage directly with the different way that animation transforms the documenting process (see Renov). Takahashi says that she means, by using 'the documentary guarantee', the ways in which documentary films establish their 'truth claims' (2011:231) in the digital era where the audience is aware that even the previously unassailably indexical photographic image may be assumed to be 'uncertain, unstable, and precarious' (2011:232). This study proposes to consider how animation may be used to document and what extra dimensions the animated artefact brings through the process of collaborative authentication. I will argue that using animation to document does not negate the indexical trace but can expand its parameters beyond the photographic, enhancing the 'documentary guarantee' by triangulating its evidence through the collaborative methodology.
The spectre of indexicality

Restoring the triadic balance

Paul Wells suggests that animation can only re-invent genre rather than work within its core principles (2002: 51), so perhaps this re-invention informs what animation is doing by uniting with documentary film. Animation is attempting to work within the documentary genre, but by doing so distorts it so spectacularly by undermining some of documentary’s core principles that it creates an entirely new genre of its own. Documentary animation therefore can be seen as a transgenic genre, taking DNA from documentary and assimilating it into its own, fusing the disparate genes into something new entirely. Whilst this chimera has been discussed and (to some extent) accepted, there are some important questions about the ways in which the referent is portrayed in animated documentary that have yet to be resolved. Bazin says (comparing drawing with photography); 'A very faithful drawing may actually tell us more about the model but despite the promptings of our critical intelligence it will never have the irrational power of the photograph to bear away our faith' (1967: 14) and this 'irrational power' of the (photographic) index haunts discussion of the animated documentary. The apparent necessity to have a tangible indexical link has biased the development of animated documentary as a genre into an over-reliance on the indexical soundtrack. The development of the 'animated interview' film, rather than allowing animation to re-invent its indexical link through methodology (for example collaborative authentication, research or expertise), has yoked animated documentaries to a live action model of indexicality.

Barthes claims that the photographic referent is not the 'optionally real thing to which an image or a sign refers but the necessarily real thing which has been placed before the lens, without which there would be no photograph' (Barthes 2000: 76). The truth about the photograph is thus twofold: it requires a referent, but, consequently, it also gives evidence of that same referent's existence. This becomes the essential difference between a photograph and a painting, since the latter 'can feign reality without having seen it' (Barthes 2000: 76). Indexicality is an inevitable element pertaining to the central argument of this thesis, the 'actually real' rather than the 'optionally real' as Barthes puts it. It speaks to how the methodology can authenticate collaborative material convincingly, and how animation
accords with the documentary genre. Keeping an element of indexicality, usually in the sound track, is often seen to be the animated documentary's way of retaining credibility and authenticity in its claim to be able to document. Indeed it has been implied that the use of aural indexicality is the key criterion by which the legitimacy of animated documentary can be judged; Driesson regards the use of indexical voice over as 'normal' in animated documentary, Renov describes the film *His Mother's Voice* (1997) as 'grounded in an aural authenticity' by using the original radio interview with the dead boy's mother as the film's soundtrack (2002), as we have seen in previous chapters Strøm identifies a category of animated documentaries as 'the animated interview' which implies the use of indexical sound (as in all the examples he gives), and Rozenkrantz talks about sound 'fill[ing] the gap that the non-indexical image has left' which void, as we've already seen, he perceives as major omission in the genre.

Wells describes a type of animated documentary which re-creates 'what has happened from the stimulus of aural sources' (1997: 44), and it describes an illustrative style of animating exactly what is articulated verbally. Examples of this include the academy award nominated *I met the Walrus* (2007, Josh Raskin)28 and the RSA animate series.29 This last example has spawned an eponymous style, although the method has been around much longer, originating from vaudeville 'Chalk Talks' or lightning sketch artists (Canemaker, 2005: 131) as demonstrated by Winsor McCay30.

Rozenkrantz argues that it is not the content of the sound track that is the primary point of using it but its authenticity as an indexical document relating to what the image iconically represents (2011). He thinks that the indexical sound validates the iconography that animation provides, but why should this necessarily be true when animation works on a different plane to live action? Framing the issues of authentication within the term 'indexical' in this way is not helpful and potentially reductive. Bill Nichols asks; 'What do the blurred boundaries of recent practice identify as a referant? Is there any "there" there, beyond the frame? To what do they refer, how do they do so, and with what end in mind?' (Nichols, 1994: xi) but this is predicated on the idea that the 'reality beyond the frame' must be photographable, or at least generally perceivable, which is reductive. As Tom Gunning

30 The modern chalk talk style of 'show and tell' is also used by artists such as Robert Castillo, for example in his 2004 film *S.P.I.C. The Storyboard of my Life*
argues in his essay 'Moving Away from the Index: Cinema and the impression of reality', Charles Sanders Pierce's original idea of the index as part of an interconnected triad of signs (index, symbol and icon) has been abstracted from its richer signifying context and extracted a simplified version of what Pierce intended it to mean (a trace or impression left by an object) to become a 'diminished concept', used to describe (and conveniently solve, he suggests) several arguments about the way that cinema works (2007: 30-1). The suggestion here is to restore the balance of meaning to the iconic and symbolic being as important as the index, rather than skewing and reducing all meaning towards the indexical. Wollen notes that Peirce did not consider any of them to be mutually exclusive, 'On the contrary, all three aspects frequently - or, he sometimes suggests, invariably - overlap and are co-present' (1967: 103). Gunning says that the index needs to be reintegrated since the index functions as 'part of a complex system of interlocking concepts that comprise not only a philosophy of signs but a theory of the mind and its relation to the world' and thinks that it may have reached the limit of usefulness as a term in cinema theory (2007: 30-1). Wollen says that it is only by considering all three aspects of these signs equally in cinema that we can truly understand its aesthetic effect (1967:121), that 'there is no need for one to eliminate the other' (1967: 132)

Positing a direct substitution between indexical images with indexical sound seems an unnecessarily literal way to attempt to validate and authenticate the 'truth' of a documentary. The author's film The Beloved Ones (2007) had the indexical soundtrack replaced by an iconic one (a reading of the edited interview document by actors); so the soundtrack represented its referent by its similarity to it (Wollen,1969: 102). The Beloved Ones was no less received as an animated documentary than the previous and subsequent films of the author, using indexical sound made in the same genre. The indexical trace lies in the words being said and in the style of presentation, not the person saying them, just as in the indexical image it is not the similarity to the referent itself that confers indexicality but the fact that the image is the trace ('proof') that the referent existed. The re-voicing of the script draws parallels with the verbatim theatre movement (such as the work of Alecky [31] Gunning excepts Deleuze from this charge.

[32] It received a special mention at Animafest Zagreb 2008 and screened internationally including at Aspen ShortsFest 2008. It has been part of several animated documentary DVD compilations and has not suffered from its lack of indexical sound.

[33] i.e. in the documentary idiom
Blythe\(^{34}\) or Clio Barnard's 2010 film *The Arbor* which used live action actors lip iconically synching original recorded interviews\(^{35}\) to eery and moving effect, but were still received as being in the documentary genre. Critic Mark Kermode, in his 'Unplugged' podcast review of the film, said that it made him aware of the difference between reality and fiction, and acknowledged 'the fact that truth exists somewhere between the two'. He referenced Aardman's *Creature Comforts* as a forerunner of this technique in juxtaposing different styles to comment more broadly on a documentary topic, yet then immediately dismissed it; stopping short of sanctioning the Aardman work as a meaningful addition to the expanded documentary discussion (2010).

Wollen says 'The truth is that a triadic model is necessary, following Peirce's trichotomy of the sign. Bazin … developed an aesthetic which was founded on the indexical character of the photographic image. … But there is a third alternative…' (1967: 116). Wollen goes on to describe Sternberg's perspective, anti-realistic but stressing the pictorial nature of cinema; the film director must create their own images on the flat white screen, not 'by bowing to the fetish of authenticity' but by creating and imposing their own style and interpretation, like a painter (1967: 117). He cites Sternberg claiming that the film directors is at the mercy of the camera, 'the mechanical contraption he [sic] is compelled to use' (ibid). Wollen acknowledges that in fact animation can circumvent this dilemma ('usually left to one side by theorists' 1967: 118) but that also it is perfectly possible to use techniques like colour tinting, set dressing and secondary animation to supplement and alter the photographic image to create the director's vision in live action more completely (1967: 118-9).

This thesis attempts to advocate an alternative way of constructing documentary work which retains authenticity as credible document yet does not necessarily require the explicit validation of mechanically captured indexicality to do so, through either image or sound. Documentary sound used in the 'animated interview' documentary model by necessity consists of dialogue or monologue, in other words: *words*. Robert Coles describes James Agee agonising about how to represent the subjects of his documentary scrutiny. To Agee words were not adequate, he says that he would rather use just 'photographs; the

\(^{34}\) <http://www.recordeddelivery.net/about.html> accessed 6\(^{th}\) March 2013

\(^{35}\) Described in Time Out as "like watching a subversive spin on the domesticity of Aardman's 'Creature Comforts'" <http://www.timeout.com/london/film/the-arbor>
rest would be fragments of cloth, bits of cotton, lumps of earth ... phials of odours, plates of food and of excrement' (Coles, 1997: 3). Agee's 'moral agony' (ibid: 13) caused by attempting to show the huge depth and breadth of a community in a documentary journalistic article echoes the inadequacies of attempting to cram all the documentary information into spoken words (no matter how genuine) whilst only allowing the visuals to support and reiterate what is being heard. My thesis is that the indexical trace can be carried by the methodology itself, as implied with the previous example of Walking with Dinosaurs and The Sinking of the Lusitania, where the contextual (live action) material was used to establish that although the work was iconographic the indexical trace was present in the rigour of the methodology. The documents produced for this work do not necessarily include live action material or indexical sound but instead the indexical trace is carried in the collaborative methodology and in this recording of it. A combination of expertise (via research scientists and interviewees' subjective experiences), research (reading papers and books on the subject) and most vitally using collaborative authentication (through the collaborative cycle of feedback and adjustment with the collaborative consultant/interviewee until they feel the document is a 'correct' reflection of their experience) gives the animated document 'the documentary guarantee' (see Takahashi). It also allows the mixture of icon, index and symbol to coexist more comfortably in relation to the referent, as the authenticating collaborative cycle slips easily between these triadic elements without the skewing influence of mechanical indexicality.
Animated documentary about perceptual brain states

'The world in here'
(Honess Roe, 2013: 106)

(7) Still from Particles In Space, Len Lye 1979

By making documentary work representing perceptual brain states there is an inevitable collision between representation and fact. Siân Ede discusses artist Andrew Carnie's work with developmental neurobiologist Richard Wingate. Carnie took images from Wingate's fine scale neural anatomy work into the way our brains lay down memory and turned them into a piece called Magic Forest (2002). The images of blood vessels dyed and photographed using laser-scanning confocal microscopes look like a mysterious forest of ghostly trees, but as Ede points out, the meaning, depth and resonance of the science work is not really
captured in the art work. 'The science is intriguing, the art wonderfully beguiling in its own right but they can't quite meet up' she says (2005: 101-3). Using moving image and the documentary form is a way to try and reconcile the constant dual demands of information and representation. Bazin says that painting strikes a balance between realism and symbolic (1967: 10), and that it is torn between the two aims; one (which he calls "primarily aesthetic") is the expression of symbolic reality where the symbol transcends the model, whilst the other ("purely psychological") is only the duplication of the world outside (1967: 11). So painting vacillates between using the symbolic (visual metaphor) and attempting to re-create the index (the realistic aesthetic), and in the same way we can see that animated documentary does the same in its quest to authenticate and explain/represent. Wollen diagnoses the iconic as being the conclusion to this polarity:

'The iconic sign is the most labile; it observes neither the norms of convention nor the physical laws which govern the index, neither thesis nor nomos. Depiction is pulled towards the antinomic poles of photography and emblematics. Both these undercurrents are co-present in the iconic sign; neither can be conclusively suppressed' (1969: 130). This lability is characteristic of animated documentaries about perceptual brain states which often fluidly move between different signifiers of information 'to reveal the substrata illusion underlying reality and to search for the reality that may, after all, lurk behind that illusion' (Sebeok, quoted by Deely, 2010: 74).

There is not a great deal of material to draw upon in the area of non-fiction animation that represents interior brain states, but there are a few examples and those that there are often manifest as fascinating and powerful films. Len Lye Particles in Space (1979) was Lye's attempt to project 'the cellular life of his brain and body directly onto film, in the hope that its abstract pattern and movement was a document of the dissolution of his neuro-physiological state as he neared death' (Wells, 1998: 29). This film would not normally be categorised as an animated documentary, and it certainly carries none of the markers we have grow to expect from a documentary film, but Renov cites Lye's work as an 'early example of the documentary/animation connection' and says 'I … want to posit Lye as a crucial archaeological source for the 'animated documentary' and its entanglements with the imaginary, the primary process, the pre-linguistic' (2002: 3). The 'serial steps in the formulation of a distinct, textually specific way of seeing or thinking' about documentary (Nichols, 1991: 29) are entirely missing along with any indexical material at all and it is possible to watch this film as an abstract film. Yet this can be read as a portrait of the inside
of Lye's head using idiopathic symbolism and once the contextual information about the origins of this film has been learned it is very hard to see it in any other light. Paul Wells discusses how Oskar Fischinger also 'recognised animation as a form which could accommodate fluid, primal, expressions of thought and feeling' (1998: 29) and wanted to use the unquestioned acceptance of abstract sound to introduce abstract imagery although not in quite the same auto-ethographic way. His earliest work though was a document of his response to Shakespeare; 'I put down all the feelings and happenings, scene after scene, in graphic lines and curves. The lines and curves showed the dramatic development of the whole work and the emotional moods very clearly' (1947).

Tim Webb's film A is for Autism (1992) was a groundbreaking example of animation used in a way that few had seen before; explicitly documenting an internal and opaque (to most) brain state. The autistic subjects of the film were invited to participate in the making of the film itself and as Ward points out (2005: 95) the film was subtitled 'a collaboration'. Webb says that the 'collaborative nature of the film was one of Clare Kitson’s main reasons for commissioning the work, she had identified this aspect as her main interest in the initial idea'. Webb, who worked with images made by the autistic and non-autistic communities, created none of the original drawings in the film. He describes himself and Ron Macrae (the other animator who worked on the film) as the 'assistants' to the autistic artists.

Karen Watson’s film Daddy’s Little Piece of Dresden China (1987) is an example of what Ward calls animation ability to give 'us an intensified route into understanding the real social world' (2005: 91). Wells describes the film as using a 'subversive mode of story-telling' (1998: 66) by using testimony of child abuse, but what she is doing simultaneously is making a docu-drama of what it was like to experience life inside her dysfunctional and abusive family. The film is counted in deliberately distancing theatrical terms, with the characters given iconic roles; the king/father, queen/mother and child/Snow White. Their bodies are expressed symbolically (for example the father is made of sharp metal and broken glass) and much of the story is distilled into the form of a stage play. Watson says of

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36 Claire Kitson was Channel 4’s commissioning editor for animation, 1989-1999.
37 Tim Webb, via private correspondence, June 2011.
38 Ibid.
39 These roles metamorphosis during the film; the child is re-cast as Lolita, the mother as a wicked witch, the father as Father Christmas, allowing the symbolism to comment on different elements of the story.
the film, 'For me, Daddy's Little Bit of Dresden China acted as a form of therapy, enabling me to express feelings I could not have expressed otherwise' (Pilling, 1992: 97).

An interactive, if not collaborative, way of working with the subjects contributing to the materiality of the film itself was also utilised by Paul Vester in his short film Abductees (1995) to a very different effect. Abductees is a short film about people who, under regressive hypnotism, 'remember' episodes of having been abducted and experimented on by aliens. This film is not a documentary per se but uses documentary tropes (including inserting treated indexical live action footage of the interviewees) to create a deadpan documentary impression. Wells describes Vester using animation to authenticate the subjective accounts of the 'abductees'; effectively subverting documentary 'by using the visual tropes of science fiction, but revises those generic hybridities by advancing the inherent artifice of animation as the most trustworthy process in verifying the narratives' (Wells, 2002: 51). The live action segments were treated by printing out onto thermal paper, scaled up by photocopying and removing frames to break down the smooth movement of live action and to better integrate them visually into the film. The shaky camera work, grainy imagery and jumpy movement of the indexical imagery as a result of the treatment have the odd effect of making the live action sequences seem less reliable than the smoothly convincing animated 're-enactments' of the abductions themselves. Indexicality here is a tool for Vester to use in neatly subverting accepted norms of the medium.

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40 From conversations with Chris Shepherd, production manager of the film, 1996.
Chris Landreth's Oscar winning short film *Ryan* (2004) took a sophisticated approach to the dual telling of the stories of both Ryan Larkin (an Oscar winning animator from the 1960s who subsequently became addicted to drink and drugs) and of Chris Landreth himself whose personal and emotional history is explored during the course of the film. The film utilises an approach that Landreth calls 'psycho-realism';

'What I’m most interested in is not achieving photorealism in CGI, but in co-opting elements of photorealism to serve a different purpose, to expose the realism of the incredibly complex, messy, chaotic, sometimes mundane, and always conflicted quality we call human nature. I refer to this as 'psychorealism' (2005).

Landreth uses symbolism and iconography in order to more clearly explain the complex documentary narrative made in the interactive mode. It shifts the textual authority towards the subject, we can see the relationship between the interviewer and interviewee and draw our own conclusions about it; this 'mode introduces a sense of partialness' (Nichols, 1991: 44) which opens up the story for us. Landreth uses the visual metaphor of literal physical disintegration and branching, smothering ties to represent the mental disintegration and crippling inhibitions of both Ryan Larkin and himself. Landreth is partially playing with the idea of a set of aesthetic choices specific to 3D animation with his photo-realism /
'psychorealism' dichotomy but he also allows the audience to get behind the eyes of the subject, explaining and evoking their unique perspective through dialogue, music and sound, rather than merely illustrating their words in a purely literal and closed ended sense from the perspective of the film maker alone. Nichols complains that with the reflexive mode the 'representativeness … becomes more problematic as we recognise the extent to which we see a constructed image rather than a slice of reality (1991: 57) but actually by seeing and understanding the construction inherent in Ryan it makes the film more, rather than less, 'real'.

The Animated Minds series, directed by former clinical psychologist Andy Glynne, similarly primarily uses symbolism to visually interpret the edited recorded interviews with subjects who have mental health issues. Andy Glynne describes recording interviews with subjects and then editing the material down 'to create a short narrative rich in visual metaphors'41. These metaphors are used as the basis of the visual design of the film, which visually describes what is being said on the soundtrack. The film makers acknowledge; 'It's all metaphor… but as far as metaphors go, it was felt that it would be a good starting point' (ibid). As previously cited Wollen says that a symbolic sign 'has the force of a law' (1969: 103), thus Fish on a Hook (Andy Glynne, 2009) uses a commonly understood metaphor to convey a less commonly understood mental state. Wollen suggests though that in 'the cinema, it is quite clear, indexical and iconic aspects are by far the most powerful. The symbolic is limited and secondary' (1969: 120), perhaps because the symbolic /metaphoric relies on a specific cultural translation to contextualise the meaning. For example if you have never seen a fish on a hook then the metaphor loses some of its power. The films in this series can be described as 'animated interviews', and whilst there is an element of interactivity between the interviewer/animator and subject/interviewee42 (particularly at the start of the process), essentially the ability of the film to convey meaning and generate empathy is contingent on the interviewee being articulate and metaphorically descriptive enough in the recorded interview to be able to give the animator enough to work with.

41 Taken from <http://animatedminds.com/the_concept/> accessed 21st October 2012
42 Andy Glynne says; 'I would spend anywhere between half an hour and 90 minutes chatting with them, then go away and cut a three- or four-–minute version [from the recording]. Before we even started on the animation, we sent it back to the kids and asked if they were happy with it. [As we made the films] we would ring up the kids with questions. We were on the phone a lot making sure that they were OK with any editorial decisions or factual accuracy.' <http://www.ideastap.com/IdeasMag/the-knowledge/mosaic-films-andy-glynne> [accessed 21 June 2012]
In the National Film Board of Canada film by Shira Avni, *Tying your own shoes* (2007), 'the goal of the film is to show what it's like to experience Down's Syndrome from the inside, rather than through the lens of family, or caregivers, or the medical community, or teachers'. The film was work-shopped and collaborated on by Avni and a group of artists with Down's Syndrome who participated in the design, animation, sound track and appeared in the film. The artists used iconographic representations of themselves alongside a symbolic representation of them as different shaped and sized birds which is repeated throughout the film. This collaborative approach is similar to Webb's in *A is for Autism*, and Avni definitely sees herself as an advocate and facilitator for the Down's Syndrome artistic community as much as a 'director'. The collaborative element to the process was far more in depth than in the 'animated interview' model. The collaborators were involved in every stage of production including monthly consultations during the editing process (2011: 85). The audience for the film itself has also been shifted by the collaborative method of production, Avni says that the film is used as a teaching tool for medical students, genetic counsellors, teachers, care workers, and other people working in the field, as well as having been screened (and won prizes) at film festivals internationally.

In his description of the poetics in documentary, Renov could equally well be talking about the use of animation in the non-fiction realm; 'it occupied an unstable position at the juncture of science and aesthetics, structure and value, truth and beauty.' (1993: 13)

Animated non-fiction has an intrinsic duality; occupying a liminal space between the real and the imaginary which makes it ideal for representing inside the mind where the real and the imaginary are processed simultaneously and (usually) unproblematically. VS Ramachandran describes how defining the line between imagining and seeing is one of the most elusive differentiations to make in neurology (2011: 86). Because this line is such a comfortable one for animation to inhabit it is overwhelmingly associated with the unreal and fantastic, the childlike and the comedic. Yet there are many perspectives of the world which can only be described in terms of the unreal (despite their documented existence) because they are so far removed from our accepted perception of reality. This speaks to the difference between 'realism' and 'naturalism' (originally theatrical definitions). Raymond

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44 Private communication with Shira Avni, June 2011.
Williams cites Strindberg's definition of the difference; naturalism is 'the method which sought to go below the surface and discover essential movements and conflicts, while realism, he said, was that which reproduced everything, even the speck of dust on the lens of the camera' (Williams, 1977:65), and whilst Williams acknowledges that the difference between these two highly debated terms went on to be exactly the opposite of Strindberg's view, the discrepancy between the two terms (the internal versus the external) is still a useful one in this discussion. Nichols' nice distinction between the world as opposed to a world only works if we all agree on what the world looks like. Dennet's 'first-person-plural presumption' (1991: 67, and see the next section) reminds us that we do not agree, and some people disagree very profoundly. No camera can capture their unique processing of the external world, but animation can attempt to represent it.
Science and Art

The informative and the transformative

A brief contextual overview of the ways in which science and art function together is relevant to this study since the subjects of the work are neuropsychological perceptual brain states which require collaborative links between artist (‘facilitator’), interviewees (‘collaborative consultants’) and research scientists. Following this examination of the area of science and art is a short description of the area of neuropsychology as it relates to this thesis.

Many of the issues which arise from the juxtaposition of science and art may seem familiar from our reading of the friction between documentary and animation. Hugo Spiers, in his keynote talk on ‘Neuroscience and Film Installations’45, discussed some of the issues inherent in neuro-scientists and artists working together on projects. He felt that the science itself was quite cold; the neurons were essentially unengaging and the role of the artist is to get under the skin of the person investigated and to make the audience engaged and reflective but not necessarily to educate. He also felt that there is a tension between presenting information (through illustration for example, or data visualisation) and making art which is by its nature transformative. He agrees with Siân Ede who says that not all science and art collaborations are interesting as art (2005: 3), perhaps because of this disconnect between different potential outcomes; informative and transformative. Ede argues that scientists see their work more pragmatically as completing a logical progression. 'In the world of science the idea that there is some kind of universal jigsaw where all the bits fit together seems to prevail' (2005: 14), she claims that scientists want a 'vision of coherence' (2005: 27). Artists do not illustrate, prettify or simplify anything about science, but they do suggest alternative approaches to and outcomes from the same data (2005: 3).

'The quest to explain the enigma of how our brains operate to form what feels like our singular experience of consciousness has become a huge preoccupation in science. This

45 ‘Starting with the Senses’ 27th October 2012, Post Graduate Training day organised by Birkbeck College, the BFI and BAFTSS
may be surprising to those of us in the arts who feel we have a unique purchase on the subjective mind, which we claim to understand from the inside, intuitively, if not so much objectively' (Ede, 2005: 103).

However, she goes on to say that this assumption by artists is incorrect since so much of the intellectual importance of science is lost in the surface sensuality of art. It is this disparity between the need to 'record, reveal, or preserve' and the need 'to express' as Michael Renov describes two of the four 'modalities of desire', or 'fundamental tendencies' of documentary (1993: 21-2). Renov argues that documentary makers should apply the analytical rigour of the poetic to the language of documentary discourse; 'poetics has, as we shall see, occupied an unstable position at the juncture of science and aesthetics, structure and value, truth and beauty' (1993: 13), but this detour from the stable ground of the index here exposes the deeply held distrust of the liminal space between science and art (as well as the distrust that has arisen in some quarters between the index and the icon). Siân Ede cites C.P. Snow's provocative 1959 essay The Two Cultures (and the response from F.R. Leavis), suggesting that their polarised views linger despite us being able to spot the snobberies of the era in their formulation (2005: 5). She goes on to say that the rift goes deeper and derives from

'radical differences in two epistemological traditions concerned with the nature of knowledge itself. On one hand there is the view that there is an implicit reality out there waiting to be discovered, independent of the observer's mental state, as very many scientists maintain. On the other hand is the idea that reality is all or at least partly a construction of the human mind, phenomenologically and linguistically determined and therefore unfixed, and whether we are aware of it or not, viewed in accordance with the prevailing values and beliefs of particular times and places' (ibid).

Renov cites Todorov arguing for the second point; that pure description, 'the hallmark of science as objective discourse - can only be what Derrida called a 'theoretical fiction'' (1993: 13) and therein lies the difference between science and art; science must believe in the theoretical fiction whilst it is the role of art to disbelieve it. Stephen Wilson says that artists are 'joining philosophers, critical theorists and sociologists in a critique of the idealised vision of science. Objectivity is seen as almost impossible, universal 'truth' as
elusive, and (even more subtly) dominant scientific paradigms as constricting conceptualisation and visualisation' (2010: 12).

One of the ways that science retains its mantle of objectivity is methodologically; the collaborative work practice inherent in the 'laboratory' model of working coupled with the rigorous process of peer review. Artists (including film makers) are still inevitably seen as individuals whose work represents their subjective vision, unsullied by interference from others (however untrue this is). In chapters four and five there will be an outline of how elements of scientific methodology (creating a collaborative model and using feedback and review) might be used not to attain objectivity but to represent its exact opposite.
Neuropsychology

Neuropsychology is the area used by this study as the arena for its practice element (discussed in more detail in later chapters). In neuropsychology itself, though, there are some interesting insights that help to enrich our understanding of representation, subjectivity and visual processing in the context of this thesis. Siân Ede cites evolutionary psychologist Nicholas Humphrey proposing that a complete 'cognitive fluidity' developed 60-70,000 years ago; evolved when humans developed self-consciousness, allowing empathy, communication and the beginnings of art (2005: 49-50). She describes archaeologist Steven Mithen's study of the evolution of the human brain from our 'Common Ancestor' (shared with other simians) to the modern human species 100,000 years ago. The brain developed and changed in that time to perform functions as required during increasingly complex interactions with the outside world. In turn, Mithen posits, 'the mind formed an internalised model of this environment, establishing a never-ceasing interplay between the boundaries of 'real' outside and proto-real inside, between the physical and metaphysical, between nature and culture' (2005: 47-8). Daniel Dennett describes the processing of the external world by the brain as one of the three types of phenom; the external dealing with sights, sounds, smells, feelings of scratchiness, heat and cold, the positions of our limbs in space and so forth. The other two types of experiences are those of the purely internal like fantasy images, memories, daydreams and ideas, and experiences of emotion or affect, which would include hunger, thirst, lust, anger et cetera (1991: 45). By concentrating on unusual perceptual processing of the external this study sets the boundaries for the experiences to translate into animation. Rita Carter points out though that what people see in their experience of the external world always differs slightly from each other 'because no two people have precisely the same number of motion cells, magenta-sensitive cells, or straight line cells' (2010: 176). Dennett argues that the assumption that scientists make about what is normal and how we (the 'normal') all perceive the world in the same way is deeply faulty. This is the assumption Nichols makes when he talks about the world as opposed to a world - it assumes we all understand the same thing by the world. Dennett describes this as 'what we might call the first-person-plural presumption' (1991: 67), which is the assumption one makes when describing the normal that everyone else sees it exactly as you do. He says we have an incorrigible assumption that our experience of the world and of being alive is exactly the same as our own, and yet
what I feel (see, process or perceive) may be very different from you. You and I may agree that a flower is red but how do we know what it is exactly that we each mean by 'red'?

Using animation to represent the world instead of live action footage from a camera makes a particular point about what we are seeing and the way we are seeing it. Delgaudio argues that by using animation it is creating a kind of meta-commentary within the documentary (1997: 193-4). This may certainly be true but there is more than that; the choice of the medium can be argued to have a more fundamental effect on the audience through neuroaesthetics. Using the way the audience processes visual information will affect what information they retain. Ramachandran describes the ‘isolation principle’ of in his universal laws of art (2011: 218), which rules that a sketch is more effective in communicating than a full colour image because it appeals to your primary visual cortex - where the earliest visual processing occurs - which only cares about lines. Therefore a complex shaded and tonal image will create ‘an attentional bottleneck’ (2011: 221) in your brain because your brain can only concentrate one aspect of an image at a time starting with the outline. However, a simple line drawing (for example a diagram in a science text book) will allow you to grasp the sense of it quicker, since you are able to give full attention to the outline where all the information is. Ann Owen points out that by translating the image from an actual object to a line drawing of the object, the artist's brain has already processed the object for us into a visually more digestible form (2011: 323). She cites Ryan and Schwartz' 1956 experiment where people were found to be able to recognise a cartoon depiction of a hand more quickly than a complex drawing or even a photograph and describes the cartoon image therefore as being 'hyper real' (2011: 323-5). Ramachandran too argues that our brains prefer the simplified image, 'In the dynamics of perception, one stable percep (perceived image) automatically excludes others' (2011: 221). Owen cites Ramachandran's earlier work with Hirstein on the 'peak shift effect' (2001:18 cited in Owen, 2011: 325-6), where the brain learns a rule about visual distillation; so that the more an image of object adheres to this rule the more of the object that image represents. Scott McCloud (1994), in his work on comic books, talks about the way in which stripping down the imagery of something (from detailed drawings to cartoon) amplifies the meaning in a way that more realistic representations cannot, hence making the work into a more universally understood and accepted form. He describes all humans having a constant awareness of our own faces when we interact with others, not as vivid as other people's faces appear in front of us as we talk to them but a sketchy awareness of arrangement, placement etc. Thus a detailed
drawing to us looks like 'the other' whereas a basic face outline looks like US, or our own
ternal imagining of ourselves. He thinks that this is why kids get so fascinated with
cartoons, 'the cartoon is a vacuum into which our identity and awareness are pulled…'
(1994: 35-6). McCloud argues that this is why nearly all comic artists use some element of
cartooning in designing the character, in order to get the audience to identify with the
character (1994: 42). It is fascinating the ways in which scientists and artists have arrived at
similar conclusions about the way that the human brain processes drawings through their
different disciplines. As Jonah Lehrer says in his book *Proust Was a Neuroscientist* of artists
and scientists: 'if you listened closely, they were actually saying the same thing' (2008: vii).

This is not to say that all animated non-fiction is (or should be) made up of line drawing, or
that the point of animated non-fiction is merely to convey as much visual information as
possible to the viewer. However looking at this 'hyper real' way in which our brains process
visual information adds an interesting dimension to the debate about animation used in a
documentary context. Dennett points out that we can only focus on one or two degrees of
vision in the dead centre of our vision, a fact that is largely concealed from us. Our eyes
'unlike television cameras are not steadily trained on the world but dart about in an
incessant and largely unnoticed game of visual tag with the items of potential interest
happening in our field of view' (1991: 54). The use of a camera as the anti-analogy for our
eyes is curious given how often the opposite is presented. However, as anyone who has
ever been made to feel sea sick by darting hand-held camera work in a 'gritty drama', we do
not want necessarily to see the world as we literally perceive it - we want to see the world
as we feel we 'know' it to be. As Walter Benjamin says, 'Unmistakably, reproduction as
offered by picture magazines and newsreels differs from the image seen by the unarmed
eye' (1955: 217). Dennett asks us to imagine the experience of watching a football crowd at
a match; you will be able to see a big blobby mass of colours, shapes and movement moving
in a people-ish way, but you'll also see lots of individual details - hats waving scarves, a face,
a hand raised. If you were to paint an impressionistic image of this scene 'the jangling riot of
color blobs would not capture the content; you do not have the experience of a jangling
riot of color blobs' but the experience of seeing a crowd of people (1991 p 55). Denne
deduces from this that one cannot paint a realistic (static) picture of visual phenomenology (1991: 55), but I would argue that the moving painting could do a much better job.\footnote{46 In *The Street* by Caroline Leaf, for example, the way that a mirror only appears when the mother needs to look in it to adjust her hat, and disappears afterwards, has always struck me as a very 'true' way of representing the focused way we see the world.}

Within film studies there has recently been some research done about 'neurocinematics' (Hasson et al, 2008), a branch of neuroaesthetics which looks specifically at the ways in which the audience's brains process the experience of watching film. They looked at methods of inter-subject correlation analysis which measures similarities in brain activity across viewers via fMRI scanning and eye tracking movements when looking at edited film versus randomly filmed footage. Whilst fascinating this is not directly related to this area of study which, as we see in chapter two, has a quite different aim in mind for the animated documents produced.\footnote{47 An interesting footnote about the way animation functions, more specifically the trope of animated anthropomorphism, in relation to prosopagnosia came up in my reading around this subject. Duchaine et al (2010), inspired by an experiment in the 1940s, used anthropomorphised animated shapes to test the social cognition of people with prosopagnosia in a way that separated facial recognition from understanding of social interaction. They were shown several animated clips; "Each clip involved a large red triangle and a smaller blue triangle, and half of the sequences utilized an enclosure that the triangles moved in and out of. The sets consisted of four theory of mind (ToM) clips, four goal-directed clips, and four random sequences" (ibid, pp 7-8). The people with prosopagnosia were tested against people without prosopagnosia to see if they knew what the shapes were doing, if they had any intentionality and if they were moving randomly - e.g. could people with prosopagnosia still anthropomorphise? The results showed that they interpreted the shapes exactly the same as the control group, so their inability to recognise faces did not have any effect on their social cognition (ibid, p 9).} This study is not directly involved with the concept of 'audience' since the animated documents that are produced and discussed are not designed for an audience beyond the collaborative consultants involved in the making of the work.

VS Ramachandran talks about how a tension exists in neurology between those who believe that the best way to study the brain is through large scale statistical analysis and those (such as him and Oliver Sacks) who think that doing small scale studies - even on a single patient - can produce the most useful data. He thinks that most of the big breakthroughs and discoveries have been made via single case studies (1999: xiii). This PhD study does not presume to attempt neuro-scientific breakthroughs of any description but, in the light of that questionably unstable base line; the 'first-person-plural presumption', will take a model of collaborative ethnographic study in order to better explain and convey ways that animation can document perceptual brain states. It is no coincidence that many of the really
popular popular science books have been written by scientists such as Ramachandran, Leherer and Sacks (for example Sacks' *The Man who Mistook his Wife for a Hat*, 1985) whose case study approach illuminates and informs the reader whilst keeping the information on a personal scale rather than a global one.
Chapter 2:
Definition of terms and scope of the argument

'It is quite misleading to validate one aspect of the cinema unilaterally at the expense of all the others. There is no pure cinema, grounded on a single essence, hermetically sealed from contamination.' (Peter Wollen, 1969: 132)

Introduction

This chapter will define and discuss some of the core terms used, the evolution of roles as they have become apparent and the scope and boundaries of the project. The methodology of this work is entirely dependent on the ramifications of determining and transmuting some of the key roles and terms in its formation. The object of this chapter is to ensure that the evaluation of the methodology discussed in chapter three is approached with parity, and the rest of this study can be considered in the light of these explanations. Some of the terms and roles have been appropriated from different subject areas and disciplines where they may have multiple or debatable meanings in various different contexts. Some of them are defined more clearly here to give a better sense of how they are being used specifically in this study. Others are discussed in order to air some of the complexities that they have contributed to the debate in these pages or to identify them as areas for reflection. Ultimately this chapter explains what I mean by using these terms.

Through the practice undertaken, it has become clear that several of the key roles needed to be redefined, modified and hence renamed to be fit for their new purpose, and the justification for this is expounded upon. Finally the scope of the argument is established through looking at which perceptual brain states have been chosen. They are briefly described and a rationale of why they were chosen and how their choice will contribute to this thesis is presented before being dealt with in more depth in chapter five.
Definition of Key Terms

This section is an opportunity to tackle unequivocally some of the key terms that will be used and to scrutinise heterogeneous words such as 'collaboration' and 'translation' whose definition in this context is vital to the explanation of this study. This inventory is also an opportunity to denominate new terms which will be referred to in this thesis.

Animation

What defines animation as a form is a well-debated subject, the conclusive exposition of which is not the purpose of this research. As Charles Solomon says, quoted in Furniss (1998: 5), it 'may be unreasonable to expect a single word to summarise such diverse methods of creating images on film'. Animation is an incredibly diverse form which encompasses an enormous amount of techniques and methods of productions, Paul Wells describes animation as 'still the art of the impossible' (2007: 12). Like any form, animation's shifting and changing parameters are dictated by developing technology and application, as Philip Kelly Denslow points out (1997: 2). He says that the variety of animation techniques (blurred around the edges by digital compositing and manipulation of live action) and styles make it hard to do anything other than group together a list of definitions without being too precise about them.

Denslow claims that ASIFA (Association of International Film Animation) have a definition of animation that boils down to the passive "not live action" which seems rather inadequate. Therefore we shall take the form of animation to broadly mean a work of moving image that has been made using a frame by frame technique, whether using digital or analogue techniques, and where a soundtrack is used it is created entirely separately from the method of visual production. An animated film is also defined and recognised as such by its maker, audience or in its distribution. There are other films which may be referred in this work to which use animation in an applied way (for example to illustrate specific points within the larger scope of the film) but are not considered to be fully animated by this definition.
Documentary

‘A practice of filmmaking that deals with actual and factual (and usually contemporary) issues, institutions, and people; whose purpose is to educate, inform, communicate, persuade, raise consciousness, or satisfy curiosity; in which the viewer is commonly addressed as a citizen of a public sphere; whose materials are selected and arranged from what already exists (rather than being made up); and whose methods involve filming 'real people' as themselves in actual locations, using natural light and ambient sound.’ (Kuhn & Westwell, 2012).

Documentary is a genre of film making and therefore, in the nature of genres, the its boundaries are organically mutable (and debatable). As Bill Nichols admits, 'Documentary as a concept or practice occupies no fixed territory' (1991: 12). We can safely say though that documentary is most commonly used in live action film making. How it fits into animation is an area for debate and discussion, Michael Renov says that documentary film 'is itself the site of much equivocation around similar axes' (1993: 13). He identifies four modalities which constitute documentary: to record, reveal or preserve, to persuade or promote, to analyse or interrogate and to express (1993: 21), a more open need and less dogmatic set of definitions than the one quoted above. For the purposes of our definition here we will interpret documentary in its broadest sense without specifically linking it to a form other than film making itself. Documentary film uses non-fiction as its frame of reference, through visuals or sound, which the film maker identifies as in the documentary genre and/or the distributor presents as a documentary work.

Non-fiction

Non-fiction relates to purely factual, without any fictitious elements, drawn from real life events. Timothy Boon in his book, Films of Fact, talks about 'non-fiction' as a term being 'ambiguous, first in the pedantic sense that many factual films use fictional scenarios and, more philosophically, because nothing absolute separates pure fiction from the construct narrative of factual films - there is a continuum' (2008: 1). This could (and is, see Renov) also be said about documentary and in many cases the terms 'documentary' and 'non-fiction' are used interchangeably. For the purposes of this study though non-fiction
encompasses not just formally framed documentary films but a wider remit; for example public information films, illustrated lectures, training videos, video diaries.

Animated non-fiction

Broader in scope than animated documentary, this term refers to the extensive field of animation which deals with non-fiction. For example motion graphics, rhetorical film making, public information films or data visualisation. Animated non-fiction has a shared history with scientific illustration and diagrammatic visuals. The term can sometimes a more helpful one than 'animated documentary' since it frees the work from a set of expectations (for example of structure) and mores which are not always helpful in describing what animation does.

Animated documentary

An animated documentary film which uses the form of animation as the framework within which the genre of documentary is investigated. This is not a neutral term, since (as Bill Nichols points out, 1991: 21) any kind of non-indexical re-enactment potentially strains the credibility of the reception of the work as documentary, but it has been accepted as a part of contemporary animation practice and as such will be examined in relation to this work.

Perceptual brain states

Scientifically documented brain states which effect the individuals perception of the world through any of their senses. This may include states which have indexical material linked to its documentation (for example fMRI scanning) and it may not. The term 'perceptual brain states' attempts to differentiate these neurological states from other which may manifest themselves externally (for example a brain disfunction like a ischaemic stroke). By making this distinction I am trying to define the scope of what animation can document representationally, since an externally manifested brain state could be captured indexically using live action film making. The term brain 'states' will be used throughout instead of the more pejorative 'conditions'48.

48 'Condition' implies something that requires medical treatment, yet most of the people working on these projects are being studied for research into perceptual processing, not treated for the ways that their brains work any more than colour blindness is 'treated'.
Synaesthesia

Synaesthesia is a brain state where when one sense is stimulated more than one sense will react, and was first recorded in the C19th (Ward, 2008:1-2). A suggestion for why this correlation may occur is that in a synaesthete’s brain senses may have more neural connections (Harrison 2001: 20-21) than in a non-synaesthetic brain, so they will experience a second (third, fourth…) sensory perception simultaneously with the one externally stimulated. Examples of synaesthesia range from having coloured days of the week to having taste-word synaesthesia, colour-orgasm synaesthesia or they may feel touch when they see others being touched (mirror-touch synaesthesia). There are thought to be over 60 different types of synaesthesia at the moment (Simner, 2012) with more being discovered all the time. Audio-visual synaesthesia can be experienced associatively (the subject may hear the word Thursday and see or feel that it is bright pink in their ‘mind’s eye’) or they may project the colour externally onto the object (so they would hear ‘Thursday’ and see the colour pink outside of their body)⁴⁹(Dixon et al, 2000).

Prosopagnosia

Prosopagnosia, or ‘face blindness’, refers to a brain state where the person cannot process recognition of human faces well enough to remember them. There are two types of prosopagnosia; acquired and congenital. Acquired is usually the result of a traumatic brain event and the prosopagnosia can be extreme. Congenital prosopagnosia is from birth and tends to be milder so the person may not even be aware they have it, although they will not be able to recognise faces as easily as their non-prosopagnosic siblings. Congenital prosopagnosia is thought to be much more common than initially thought (Duchaine and Nakayama, 2006) although severe developmental prosopagnosia is extremely rare. The development of social intelligence was an early part of the brains function, developing over 6,000,000 years ago, whilst language appeared around 250,000 years ago, becoming more sophisticated and developed as time went on (Ede, 2005: 48), which is why it is much more common to forget a name and remember a face (the name being language based information and therefore a relatively modern addition to the brain) than remember a name but forget a face.

⁴⁹ This associator-projector dichotomy is an interesting one to me as it echoes stages of the creative animation film-making process; from imagining how it will look to making the image in the real world - and literally projecting it onto a screen.
Congenital vs. Developmental

There is some shuffling about between these terms in literature on prosopagnosia. Essentially congenital means from birth whilst developmental can refer to the state appearing during early development; for example some people may develop prosopagnosia during the onset of autism in the toddler years. For the sake of clarity I shall use 'congenital' but 'developmental' is occasionally used congruently in the literature.

Phantom Limb Syndrome

Phantom limb syndrome refers to kinaesthetic sensations of limbs after they have been amputated. This induces very specific and vivid perception that the missing limb is still there, and often induces severe accompanying pain. Documentation of the existence of phantom limb syndrome goes back to the sixteenth century (Ramachandran, 1999: 22) although in common with other internally experienced brain states it was not taken seriously for some time after it was first reported (see synaesthesia).

A more in depth definition and explanation of these three brain states will be explored in the 'distinction of scope' section at the end of this chapter.

Collaboration

A non-hierarchical way of working where the parties exchange ideas and suggestions in an equitable way, regardless of who (in this case) is experiencing the brain state, who is researching it and who is translating it into a film. Collaborative working is dependent on dialogic participation between all members of the collaborative group. Vera John-Steiner talks about the 'dynamics of mutuality' (2000: 3). She points out that the collaborative working model is not a new one in either science (Marie & Pierre Curie) or the arts (Ted Hughes and Sylvia Plath). Einstein, for example, worked often with others particularly in the area of mathematical calculations, collaborating with Marcel Grossman (maths) and Niels Bohr (physics) creating a 'disciplinary complementarity' to strengthen his own ideas (John-Steiner, 2000: 42).

However, the kind of collaborative work in this PhD study is more weighted than the model John-Steiner describes; it is not made up of two equally skilled and invested parties but an initiator/facilitator who drives the project and sets the boundaries together with
consulting scientists - interested in the outcome but not as invested in it since their own research takes precedence - and collaborative consultants whose desire for expression would not necessarily have used animation as its medium since their skills and knowledge does not lie in that area. In other words the power/knowledge relationships between all the collaborating parties is not equal. The classic symbiotic relationship of the collaborative model where each strengthens the weaknesses of the other and together achieve complementarity or 'productive interdependence' (John-Steiner, 2000: 47), able to address problems and solve them together, is not an exact match for this model. A better model would be Luke Eric Lassiter’s ‘collaborative ethnography’ model which is discussed further in the next chapter.

It is important also to emphasise that this is not participatory research, hence the collaborators are called ‘collaborative consultants’ rather than ‘collaborative participants’ (see ‘key roles in this research’).

Translation

The issue of translation and how it relates to the practice is one that has come up in this study since the central aim of the work is for animation to be able to adequately document perceptual brain states, and in order to do so the collaborative consultant’s brain states must be communicated to and translated by the facilitator (animator) of the project. Benjamin says that 'the problem of ripening the seed of pure language in a translation seems to be insoluble' (1955: 78) and that the two concepts which govern the translation process are fidelity and licence; if the translation is rigidly faithful to the original it can demolish its meaning entirely 'fidelity in reproducing the form impedes the rendering of the sense' (ibid) and 'the demand for literalness, whose justification is obvious, whose legitimate ground is quite obscure, must be understood in a more meaningful context' (78-9). By taking the words of the collaborative consultant in this study and literally using them as a symbolic visual reference the intention of their meaning will not be best served. Translation must, Benjamin says, let itself go and let the 'intentio' of the work shine through 'not as reproduction but [in] harmony' with the original (1955: 79). The fidelity of the translation should lie in the attempt to reflect the original intention of the work not the word for word literal translation (1955: 79). In this work the translation does not occur between two linguistic systems but between two fundamentally different systems - language and imagery. The differences between these two systems are clear to both translator and translated, and we have the benefit of being able to strike the balance between 'fidelity and
license’ since the collaborative consultants are available to communicate with and feedback their impressions of the translations, reigning in license and asserting fidelity themselves.

Practice

It is not in the scope of this PhD study to define the difference between practice-led and practice-based, but for the purposes of clarity I shall be using the Creativity & Cognition group’s definition of the distinction between them;

‘If a creative artefact is the basis of the contribution to knowledge, the research is practice-based. If the research leads primarily to new understandings about practice, it is practice-led’.

By this definition this project is first practice based, in the creation of the author’s earlier work and then practice led as those initial findings were developed and expanded to formalise a methodology.

I wish to introduce into the discussion a key term for talking about animation in a documentary context. The term ‘animated document’ is the contribution to this inventory of fundamental terms as a description of animation’s evidential ability within the documentary genre.

The animated document

The animated clips made as a result of, and an integral part of, this study are described as 'documents' made in the development of visual 'evidence' of the subjective perceptual states of the collaborative consultants. They are not intended to be discrete animated films (documentaries) but are instead working documents, documentary evidence and an indication of completion of a particular stage of the research. They are not designed to explain the subjective perceptual state to a broader audience, but are working documents which reflect that state back to the person who has worked with the facilitator to describe and express it. In this project therefore they are designed to evoke rather than represent the

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50 From the Creativity & Cognition website,
experience in the same way that Honess Roe (2013: 121) describes "An Eyeful of Sound" evokes rather than represents, the experience of synaesthesia. Scientists can explain how they think the brain works by mapping the cortex or understanding synaptic connection 'but they cannot convey how experience feels the way it does to us as individuals' (Ede, 2005: 3-4). The animated document makes the distinction between a visualisation of how it feels to experience the perceptual state rather than an explanation of what the perceptual state is.51

51 Interestingly O'Reilly notes exactly this distinction in postmodern ethnographic practices; 'Crucially, postmodern ethnography evokes rather than represents' (2009: 188).
Key roles in this research

The functions here of film director, scientist and subject are all reconfigured by the methodology chosen, so it seemed apposite to distinguish them more explicitly at this point. The key roles within this work become the interrelated and collaborative ones of (respectively) facilitator, consulting research scientists and collaborative consultants. Each of these roles is essential to the practice as a whole since without them it could not culminate in the animated document at the end of the collaborative process. The methodology developed to work in this way will be discussed at more length in later chapters but for the purposes of lucidity at this stage it may be helpful to clarify the individual roles within the process.

Facilitator

The 'facilitator' is a devolution of the director role. The filmic elements of the role have been erased, the cinematic discourse removed and the 'director' has been subsumed into becoming both a conduit for documenting information and translating data into imagery. The role is not contributory, therefore the ‘facilitator’ is not a participatory practitioner engaging with participatory workshops, but rather is using their specialised knowledge of the animation pipeline to facilitate the perspective of the collaborative consultant. The authorial role has devolved into a facilitatory one, leading to a diminished creative authorial voice but resulting in the increased 'authenticity' (as defined by the collaborative consultants) of the material gathered, created and presented in the animated documents. The role of the film maker/director/animator/project organiser/translator therefore, for the purposes of this study, is referred to just as the 'facilitator', acknowledging the mutable role of interpreter/translator rather than the author of the creative process in the way that a term such as 'director' would imply. Benjamin says about the translating process that the 'intention of the poet is spontaneous, primary, graphic; that of the translator is derivative, ultimate, ideational' (1955: 77) and this stripping away of creative spontaneity is a familiar one to the facilitator role.

The facilitator is the initiator and administrator of the project, and the person who instigates the moving image practice. They may be motivated by an interest in the subject area, they may have first hand experience of it or they may be directly commissioned to
make the work by a third party. The facilitator must bridge the gap between the consultant scientists and collaborators, and the final outcome (moving image). This involves developing working relationships with both sets of people and being flexible enough to be able to process visually what they are being told (even when it may seem counter intuitive). This is not to say that the authorial voice is completely demolished (as Karen O'Reilly points out in her critique of postmodern ethnographic techniques such an aim would be 'doomed to failure', 2009: 172) but that the methodology is not constructed in the traditional film production hierarchical structure where the director's vision is privileged above all others.

Consultant scientists
The consultant scientists provide the context, information and research knowledge needed to know more than just a basic understanding of the accepted knowledge in the field. In anthropological terms they may serve as 'gatekeepers' (O'Reilly, 2009: 132) who also provide access to potential collaborative partners if these are needed; people (‘subjects’) they are using for research who have the brain state being studied. Consultant scientists are available at key stages during the project and may have a vested involvement in the outcome of the project as it pertains to their area of scientific research (for example if they intend to use the film as a teaching, illustrative, promotional or research aid). They may have existing relationships with the collaborative consultants, but this may be more traditionally set up in a scientist/subject dichotomy.

Collaborative consultants
The role which would more usually be termed 'interviewee' (film making) or 'subject' (science research), i.e. the people being interviewed for the project, is in this case referred to as 'collaborative consultant', taken from Lassiter's collaborative ethnographic work (2005: 13). The research scientists who have been part of the project are referred to as 'consulting scientists' as their part in the process has not been so intensively collaborative but has been key in grounding this work in current scientific research and as such helping to direct the work.

The term 'participants' was specifically not chosen as it implied more active participation in the creation of the artwork itself, so 'consultants' better articulated their mainly verbal input. Collaborative consultants use drawing, painting, verbal descriptions and a colour choice to indicate their perspectives but the process of sharing animation practice and
process through participatory workshops was not used in this instance. In future projects if
the collaborative role expanded to include their own drawings or animated sequences then
the 'participant' label would become more appropriate.
The collaborative consultants themselves have sensory empirical knowledge of the subject
area since they experience it first hand. Their motivation in being part of the project may
be to express their unique experience to a wider audience (even family and friends), to help
the study of a research area they have a stake in or because they are being paid to take part
in the study. Their role can be very intense and demanding for short bursts of time as they
are asked to present information they never normally articulate into a visual language,
something they may feel uncomfortable doing or unsure of how to do. They may be used
to working with scientists, as a subject of study but may not be familiar with the role of
collaborator in the area of animation practice research.
Distinction of Scope

The primary audience for the animated documents are the collaborative consultants whose experience is shaping the work. The audience for this study as a whole is the research community that is addressed via this thesis and related academic papers; my PhD supervisors and examiners, the animated film and animated documentary studies community. The work made here may well be of peripheral interest to scientific communities as it illustrates and expands on their work but this study does not presume to attempt to produce original work in that area. The 'audience' for this work is limited in the way described since the clips are animated documents; evolving experimental work 'authenticating' the findings which arise from the collaborative process.

This study will look at the way that animation can be used to document perceptual brain states. The perceptual states chosen from the neuropsychological field have been selected because their manifestation is entirely internal and therefore unable to be visually represented indexically.

*The perceptual brain states used in this study:*

Prosopagnosia

Prosopagnosia (from the Greek: ‘prosopon’ for ‘face’ and ‘agnosia’ for ‘not knowing’), more commonly known as 'face blindness', refers to a brain state where the person cannot process recognition of human faces well enough to retain a memory of them, whilst retaining all other visual recognition abilities.

'Face blindness may be caused by a dysfunction along any point on the cortical recognition pathway. The severity and guise of the condition depend on precisely where the fault lies. If it is early in the process and affects both left and right hemispheres the effect may be catastrophic: one such patient thought a picture of a dog was a man with an unusually hairy beard' (Carter, 2010: 197)

It is rare, but not as rare as once thought. There are two types of prosopagnosia; acquired and congenital. 'Acquired' is usually the result of a traumatic brain event (from stroke damage for example, or sustaining a head injury) and the prosopagnosia can be extreme.

52 information from Bournemouth University Prosopagnosia research website
<http://prosopagnosiaresearch.org/index/information> accessed 8th March 2013
People who have this type cannot recognise any faces, even those of partners, parents or children. Congenital is present from birth, and can be milder, although still debilitating. Psychologist Oliver Sachs and American portrait painter Chuck Close both have congenital prosopagnosia; an interesting choice given their respective professions dealing with people face to face. In an interview Close said that having prosopagnosia was one of the galvanising factors in his fascination with faces (see chapter five), and, as mentioned before, Sacks is famous for his book describing someone with prosopagnosia, *The Man who Mistook his Wife for a Hat*, 1985. Congenital prosopagnosia is present from birth and may be more widespread than once thought. Anecdotally, since beginning this study I have met several people who claim to be congenitally prosopagnosic. The person with it may not even be aware they have it, in common with some other congenital brain states (e.g. synaesthesia).

**Phantom Limb Syndrome**

Phantom Limb syndrome is a term used to describe a range of proprioceptive sensations (often painful) in limbs after they have been amputated. The amputee has a very specific and vivid perception that the missing limb is still there, in space. Often the phantom limb is of slightly different proportions to the absent limb, for example slightly shorter and wider, it can feel as if it is missing sections (like the shin or upper thigh, areas which have fewer nerve endings than feet and hands) or it can feel as if it is in an unnatural position causing cramp and extreme discomfort. Documentation of phantom limb existence goes back to the sixteenth century (Ramachandran, 2005: 22), and according to VS Ramachandran, famous amputee Lord Nelson ascribed proof of the existence of a soul to his vivid phantom limb sensations; since if an arm can 'exist' after it has gone, why can't the whole body? (2005: 23). The phrase 'phantom limb' was coined by North American doctor Silas Weir Mitchell in 1872 after witnessing civil war injuries. Mitchell published the first article on the subject under a pseudonym in a popular (rather than medical) journal for fear of ridicule from fellow medical professionals (ibid). Phantom limb sensations occur as the brain restructures to accommodate the altered sensations to the body's sense of touch and

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54 A recent German study quoted on the Bournemouth University Prosopagnosia research website suggested a 2-2.5% prevalence rate <http://prosopagnosiaresearch.org/index/information> accessed 8th March 2013
proprioleception after the limb removal (Ward, 2008: 93). The part of the brain that should, but fails to, receive input about the (missing) limb may strengthen input from other areas, so that a touch on the face may manifest as a touch on the phantom limb (ibid), giving an insight into the way that the brain is wired and perceives sensory input.

Vivian Sobchak has written about her experiences and thoughts about the ‘tropology of the prosthetic’ (2004: 215) from the perspective of both a phenomenologist and an amputee. Her arguments are interesting and to some extent inform the approach of deeply subjective representation that the animation in this study documents; she makes a distinction between ‘the prosthetic as a tropological figure but also my prosthetic as a material but also a phenomenologically lived artifact’ (206) speaking to the perceptual experience of the prosthesis. However, the prosthetic limb itself is not the area of discussion in this study, which aims to document the perceptual experience of the phantom limb itself rather than the physical replacement object. Additionally, Sobchak’s discussion on this subject aims to challenge the generalisation of ‘prosthesis’ as a convenient academic metaphor, a portmanteau word straining at the seams. She quotes Diane Nelson as saying ‘the prosthetic metaphor is drawn from recent work in cyborg anthropology, feminist studies of science, philosophy, political economy, disability studies, and neuropsychology…’ (Nelson quoted in Sobchak, 2004: 208). As Sobchak dryly remarks, that ‘is a tall order for a metaphor to fill’ (ibid) and it is one that is outside the scope of this study.

Audio-visual synaesthesia

Audio-visual synaesthesia is a brain state where, when the audio sense is stimulated, the visual sense responds simultaneously giving the impression of 'coloured sound'. The first record of this was in 1812, when George Sachs submitted his medical dissertation and described his own experience of the brain trait (Ward, 2008:1-2). Audio-visual synaesthesia results in the impression of visuals accompanying sound, with not only colour but texture, shape and movement. It is possible to have more than two of the senses linked like in this way, so some people can have audio-visual-tactile-taste-smell links. A suggestion for why this might happen is that in a synaesthete’s brain senses may have more neural connections (Harrison 2001: 20-22) than senses in a non-synaesthetic brain, so they will experience a second (third, fourth…) sensory perception simultaneously with the one being externally stimulated. Synaesthesia may manifest in many different ways. This can mean that synaesthetic people might have coloured days of the week (e.g. Monday is red, Tuesday is
yellow etc.), coloured letters, words or numbers\(^{55}\) (grapheme-colour synaesthesia), they may smell or taste sounds\(^{56}\) or even feel touch when they see others being touched (mirror-touch synaesthesia). Any of the senses can be linked in this way and for some people many senses can be linked, for example some of the people we worked with on *An Eyeful of Sound* could hear, see and physically feel sounds on their skin. Equally, senses can be linked in both directions, for example one of our interviewees could see a red traffic light, and she could hear the sound that that particular shade of red triggered in her head, but then subsequently she saw another colour triggered by the internally experienced sound which was not red. This example illustrates the apparently illogical nature of the brain trait and a key characteristic of it is that synaesthesia is experienced uniquely by each person who has it. Whilst a C note played on a cello may be appear as a gold silky sinuous shape with metallic glints moving from left to right to one synaesthetic person, to another (with exactly the same kind of synaesthesia) it may be a rough brown spongy blob shooting off from right to left.

Audio-visual synaesthesia can be experienced associatively (the subject may hear the word Thursday and see that it is bright pink in their 'mind's eye') or they may project the colour externally onto the object (so they would hear 'Thursday' and see the colour pink outside of their body). This associator-projector\(^{57}\) dichotomy is an interesting one as it echoes stages of the creative animation film-making process; from imagining how it will look to making the image in the real world - and literally projecting it onto a screen.

Synaesthesia was first studied in the late 19th and early 20th centuries but then had a hiatus for almost 50 years when very little was published on the subject (Harrison, 2001: 26). It has enjoyed a resurgence in interest in recent years, according to Harrison 'the rise of cognitive psychology in the 1960s allowed the psychological (and neuroscientific) community to indulge once again in speculation about the nature of 'states of mind'' (2001: 53). Synaesthesia is now recognised as a documented brain trait that can give valuable broader insights into how everyone's brains work.

Clarification of why these states were chosen

\(^{55}\) See Duffy, P., 2001 *Blue Cats and Chartreuse Kittens: How synesthetes color their worlds* New York:Henry Holt pp 7 -15 for an autobiographical description of the authors developing childhood awareness of her synaesthesia

\(^{56}\) See Ward (2008) for a discussion of synaesthete James Wannerton's taste-word synaesthesia

\(^{57}\) Dixon, M. J., Smilek D., & Merikle, P. M. (2000) Not all synaesthetes are created equal: Projector vs. associator synaesthetes *Cognitive, Affective and Behavioral Neuroscience*, 4, 335-343.
To develop and expand the methodology evolved during the *Synaesthesia and Sound / Eyeful of Sound* project it was critical to see how far the collaborative model could be exploited. A key attribute of synaesthesia was that it was an easily visualised and therefore easily verified brain trait, since the person with it can vividly describe the visual attributes of their sensations. Choosing brain states which were experienced using different senses other than the purely visual allowed me to examine theories about collaborative outputs and the ways in which animation can be used to document the intensely subjective. Therefore the two essentially non-visual brain states were chosen to concentrate on in this project are very different in manifestation, deliberately chosen to be as demanding to the visual artist as possible. Phantom limb syndrome is a kinaesthetic perception, the feeling of a limb in space, physical sensations rather than visual perception. Some of the sensations are similar to the experience of having a physical limb but others are significantly different from 'normal' kinaesthesia, more intense, painful\(^{58}\) and often frankly odd.

Prosopagnosia is positively anti-visual, it is about not seeing. Like all agnosiac states it the absence of a sensation (recognition) as opposed to a kinaesthetic presence (phantom limb) or extra-visual sensation (audio-visual synaesthesia). It only applies to the human face, which is a basic part of our tribal humanity and therefore extremely counter-intuitive to most humans. Both the brain states chosen for the PhD study therefore would test the methodology and visual representation rigorously.

The first criteria for choosing these subject areas then was that they would be hard to represent visually, the second was that they had to be perceptual states which were perceived entirely internally, with no outward indication that they were being experienced. This was to fully utilise the form of animation; if the manifestation of the brain state could be filmed or captured pro-filmically then that would disqualify it from my selection (e.g. Bell's Palsy or some kinds of stroke). Brain states which were accompanied by alternative views of reality, for example psychotic states or certain types of schizophrenia, were considered for study but rejected on the grounds that using a clearly demarcated affected area, which did not modify the individual's perception of the rest of the world, would allow

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\(^{58}\) In a survey of 537 amputees, only 14.8% were completely pain-free, whereas 74.5% had phantom limb pain. The reported sensations included burning, cramping, prickling, electrification and tingling. Kern U, Busch V, Rockland M, Kohl M, Birklein F

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Schmerz (Berlin, Germany) [2009, 23(5):479-488]
the work to concentrate on the single altered perception. Similarly potentially temporary psychological states, for example depression or post-traumatic stress syndrome (arguably)\textsuperscript{59}, were rejected in favour of permanent ones; meaning that irreversible changes had been made to the brains neural pathways which will forever transmute that person’s perceptual state. They also had to be experienced distinctively by each individual person; whilst there may be similarities in some of the broad strokes of the experiences they were ultimately unique to that person, shaped by their particular perspective. This meant that the tool of collaborative creation could be used to its optimum advantage, scrutinising (and documenting) the state from that individual’s point of view. For example someone who developed the brain state later in life would experience it differently from someone who had it congenitally. Other alternative brain states considered for inclusion during this period of the study included left and right side brain disfunction, Charles Bonnet syndrome\textsuperscript{60} and visual blind spots. The two that were finally chosen both investigated a different type of sensory perception to the audio-visual ones looked at in my previous work on synaesthesia, An Eyeful of Sound (2010). By choosing kinaesthetic perception (phantom limb syndrome) and a specific type of agnosia (face blindness) the perceptual states were deliberately un-visual in manifestation in order to test the thesis that by working collaboratively with animation such elusively understood perceptual states might be able to be communicated adequately to the satisfaction of the collaborative consultant.

How using these brain states will help answer the research questions
‘The brain does not ‘see’, ‘hear’ or ‘feel’ the outside world. It constructs it in response to stimuli.’ (Carter, 2010:205). Carter goes on to explain that usually the stimuli comes from outside the body, but in some brains the external information can be misunderstood and misconstrued (as in prosopagnosia). Other brains can generate their own internal information which it then misreads as coming from outside the body (as in phantom limb syndrome, or synaesthesia) (ibid). Every brain interprets the world differently; some brains radically so. The brain states here have been chosen because they are extreme examples of

\textsuperscript{59} Evidence shows that some people with PTSD suffer for a long time, potentially for years, but the state is generally thought treatable through cognitive behavioural therapy (amongst other treatments). <http://www.ptsd.va.gov/professional/pages/managing-grief-after-disaster.asp> accessed 22 May 2012
\textsuperscript{60} A surprisingly common syndrome (Ramachandran, 2005 : 87) where due to damage in the visual pathway the person experiences vivid and often cartoon like hallucinations in everyday life. I decided against this one because it seemed too close to the manifestation of visuals in audio-visual synaesthesia.
subjective but experientially equally 'real' ways of perceiving the outside world. By choosing outlier brain states, far removed from most peoples' experiences and perceived in intensely subjective ways, I can investigate how animation functions in documenting such intimate information. Through a methodology in close collaboration with the person experiencing the brain state the animated document takes the emphasis away from the solely indexical, which is not as relevant in this highly subjective context, and presents a set of more balanced signs.
Chapter 3:
Critical context for practice

‘All translation is only a somewhat provisional way of coming to terms with the foreignness of languages’
Walter Benjamin (1955: 75)

Introduction

Up to this point this thesis has evidenced the context of and need for this work (chapter one) and established the terms used and boundaries of this study (chapter two). In this chapter the intention is to explain the methodological path chosen, why it has been chosen and the adaptations required to use it to create animated documents. There is also a contrast with alternative methodologies in animated documentary to place the methodology in a contemporary context. Finally I discuss how the methodology was implemented before going on to discuss the practice in more detail in the next chapter.

This doctoral study sets out to fuse insider and outsider perspectives in a collectively useful and enlightening way, working collaboratively through an iterative-inductive (the design evolving through the study) process as much as possible from conception to conclusion. The methodological framework for this PhD is based on an ethnographic model. Despite differences in labels, in real terms much of the practical business of collecting information for a documentary film has commonalities with ethnographic fieldwork; gaining access, recruiting participants, establishing roles, building rapport, using gate keepers, key informers, gaining ‘emic’ (insider) perspective, retaining ‘etic’ (outsider) perspective and so on (O’Reilly, 2009:3). Ethnography and documentary film making both rely heavily on the interview for their material, attempting to learn about the interviewee hermeneutically (O’Reilly, 2009:126) using a case study model. Establishing rapport, reciprocity and trust is key to both documentary and ethnography in order to secure the quality of the final material; O’Reilly talks about the familiar position of the ‘accepted stranger’ (2009: 176), which would be recognised by Michael Rabinger in his text on the practicalities of making a
documentary where he discusses approaching participants and developing trust with film subjects although he couches it in different terms (2009: 343-4).

Given these parallels then, this study draws on an adapted methodology derived from collaborative ethnography, specifically from the work of Luke Eric Lassiter. This approach has been chosen because by placing the collaborators and the feedback process inherent in this methodology in the centre of this work it is trying to restore the trichotomy of signs by not reducing the indexical to solely mechanically recorded. The referent becomes the collaborative process itself, the conversation between collaborators. By using a collaboratively ethnographic approach the collaborative consultant is invited into the materiality of the project, breaking down the hierarchical structure of 'director' and 'subject', and thus bestowing 'the documentary guarantee' (see Takahashi) upon the animated document.
The methodological framework

Lassiter describes collaborative ethnography as an approach to ethnographic work that consciously and transparently emphasises and promotes a collaborative approach to every single part of the process, from conceptualisation to fieldwork and the final writing up of the results (2005:16). His definition of collaborative ethnography is based on four main areas;


He gives six different examples of collaborative practice; using the consultants dialogically as readers and collaborative editors, the use of focus groups to review a text in part or whole, using formal editorial boards made up of key appointed members of the community studied, applying ethnographer-consultant teams which can be useful in larger projects where each team can deal with a chapter, evolving texts in larger community forums and finally the creation of co written texts, perhaps the most straightforward method (2005: 139). The four seminal areas which Lassiter identifies are very helpful pointers for this study and the way in which the practicalities of the process may be approached. The examples of practice are less so, simply because they are more likely to relate to specifically ethnographic practice, however they give us an idea of scope and scale.

Ethnography is an interpretive area, not a universalist scientific one (Geertz, 1983: 55-70). This interpretive position, straddling science and humanities, allows for much more ambiguity about the purpose and by the late C20th according to Lassiter the concept of ethnography itself became ‘less convincing and durable’ (2005: 51). However, this also allowed it to become more reflexive and dialogic, with post-modernism and feminism attempting to address ethnography’s crisis of confidence (ibid). Collaborative working in ethnography has not always been acknowledged as such, especially in feminist anthropology where using such methods was criticised for being unprofessional (2005: 58), but a model of feedback (a vital part of the of collaborative process) has been inherent in ethnographic film making in particular from its origins. Steven Feld says that Jean Rouch saw Flaherty (particularly in Nanook of the North, 1922) as being
'the unconscious originator of filmic equivalents of the most basic ethnographic field
methods, participant observation and feedback' by his practice of developing rushes in
the field and screening them to the subjects of his film for feedback (2003: 12-13).

Rouch also applauds Flaherty's staging of events in the film for dramatic impact, citing Luc
de Heusch's phrase the 'participating camera' (2003: 13, 1962: 35), implying an active
dialogic role between ethnographic filmmaker and subject. Feld says that Rouch often
described making an early film about hippopotamus hunting in Africa where he had used
music on the soundtrack. When he screened it to the Sorko hunters depicted in the film
they told him that this music was inappropriate; a hunt should always be completely silent.
This reportedly simultaneously taught him a lot about hippopotamus hunting, the Sorko
notion of drama, and his own predisposition to use music dramatically (2003: 19). It is also
a good example of how feedback to the subjects of the film themselves rather than to an
academic or wider general audience can enhance and enrich the material. In his essay, The
Camera and Man (1973, 2003: 44), Rouch describes using a portable movie-scope viewer to
gather feedback as enabling him to

'gather more information in two weeks than I could get in three months of direct
observation and interview. This time of a posteriori working is just the beginning of what
is already a new type of relationship between the anthropologist and the group he
studies, the first step in what some of us have labeled "shared anthropology"'.

He describes the process of feedback as 'audiovisual reciprocity', and part of 'participatory
research'.

However, it is not clear from his writing that this reciprocal methodology was formalised as
a working model, and Rouch's pioneering work in 'ethno-fiction' meant that he saw few
boundaries between documentary film and fiction films (or perhaps rather that he saw
fiction as another tool available to the ethnographic film maker to be used in representing
'reality'). Rouch's work is an important touchstone in a wider discussion of ethnographic
film but his methodology does not relate to the one implemented in our study because his
use of fiction and re-staging parallels rather than converges with the
methodology chosen here.

It should be noted at this stage that the term 'collaborative ethnography' can confusingly
also be given to the process of academic ethnographers working with each other, i.e. other
academics. This speaks volumes about the way in which collaboration is viewed in academic ethnographic circles; something which can only conceivably be kept within peers in the academy. O'Reilly talks about issues around collaboration including team work, intimacy and conflict (2009: 178) but solely in relation to the interaction between researchers themselves rather than with subjects of the study. Lassiter ruefully points out that his version of collaborative ethnography has not been well received by the mainstream ethnographic academic community (hence there is not much written about it other than his book). He says;

'Perhaps collaborative ethnographies linger at the margins because they do not engender the same kind of authority, prestige, and recognition as the texts we explicitly write for our academic colleagues; or perhaps they remain at the margins because our interlocutors' constructions of culture differ too profoundly from the academy's instructions of culture' (2005:13).

One of Lassiter’s motivating concept for the collaborative model was that it has the ability to address key problems in ethnography to do with privilege and class that were raised in the 1980s (2005:13). Lassiter cites George E Marcus who says that the 1980s critique of ethnography unveiled the unacknowledged co-authorship of much of the work, that collaboration up until that point had been 'glossed over by the trope of rapport' (2005: 71). Marcus argued that the establishing of a rapport with the subjects of study had always been a prerequisite of doing the study but exposing this acknowledged that the subject's contribution might also alter the outcome or direction of the work itself, a provocative interpretation of the concept of rapport and the balance of ethnographic/authorial authority, but a necessary part of the process for this methodology since that alteration of the outcome by the 'subject's contribution' is the essence of the collaborative ethnographic process. In my case the establishing of rapport with the collaborative consultants is an imperative part of the process since the claim to referent status for the animated document lies in the dialogic nature of the relationship. It requires the outcome to be altered by exchange between the facilitator and the collaborative consultants. The diminishment of authorial authority is an intrinsic component in the facilitator's role, as opposed to the directorial one, and so by using this methodology the concept of rapport is approached in a different way to that of classic ethnography as critiqued by Marcus.
Adapting the methodology for animation

The methodology is described as a 'adapted' because the intended outcome is different from that of collaborative ethnography, and the material collected deviates from accepted academic outcomes. In ethnography, collaborative or otherwise, the outcome is pure academic written research for a small and defined audience of other academic researchers. This project’s outcome, however, takes the form of documents; animated moving image clips, as well as a written research element, so the outcome is a different form for an audience in a different field. The material collected by the collaborative ethnographer to feed directly into their research might be aural recordings supported by indexical imagery and field notes for reference. The animated documentary maker can collect these things too but also include extensive e-mail discussion, drawings made by the interviewee, as well as images made by themselves in response to the data. The animated documents themselves are not necessarily completed pieces but serve as discussion points from which further conversation and amelioration can take place, resulting in thousands of frames to evoke the experience in several clips.

Another point of divergence is the fact that ethnography commonly uses the immersion of the researcher into the physical space of the community of people being studied. They vigilantly examine at close quarters the lifestyle or situation that their subjects experience in order to draw conclusions about it. An example of this would be using 'participant observation', where the researcher actually takes part in the life style of the studied group, or studies a group that they are already a part of. This experiential approach cannot be followed when investigating and representing interior brain states for several different reasons. The people interviewed are not necessarily part of an explicit community based on their different way of seeing the world; they are much more likely to be part of a community which does not understand, acknowledge or even register their unusual brain state. They may not be aware that their perceptual processing is any different from anyone else’s (this is particularly true of congenital perceptual states, such as synaesthesia or congenital prosopagnosia) so they may not know that they actually perceive the world 'differently'. They may be part of a support group (online or actual) but if their state is very rare they may not know anyone in their geographical area who shares their experience and so have little opportunity to develop personal relationships with their peers. The internal
brain state is entirely subjectively experienced, so that even if you did have a community or group of people who shared the same brain state and interacted regularly (for example, a family of people with synaesthesia - a genetic trait - sharing a house) they would not experience it in exactly the same way as each other, so that observations about their external interaction would be meaningless from the perspective of divining more about their internal experiences. Their lifestyle and personal situation does not have any bearing on the reasons why their have the brain state that they do, so sharing or observing it would teach the observer nothing. Finally many, if not most, of the interviewees spoken to for this study rarely explain or articulate externally the experience of having this brain state to others. If their brain state is generally seen as detrimental or disabling in some way then they may have plenty of help and support (both physical and emotional) and talk very freely about the problems they experience but they do not talk about how it feels to experience. Stephen, who has phantom limb syndrome, said in an e-mail;
'Apart from talking to you, I never really attempt to describe it to anyone, assuming most people would have only the tiniest interest!'
Andy, who has prosopagnosia said in an interview;
'I don't have any trouble recognising dogs, for example, from a photograph but - [laughs] it never occurred ... it never clicked before now that that wasn't normal - that, you know, that you should be able to do that with people as well'
As previously explained (see the 'Key Roles' section) the participatory workshop model was not used and the collaborative consultant one adopted. For these reasons therefore the facilitator may rely on the borrowed methodological tools of the collaborative ethnographer - collaboration, dialogue and transparency - whilst adapting and supplementing them for the animation process.

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61 e-mail 19th April 2012
62 interview with Andy November 2010
A rationalisation of what using this methodology achieves

Tom Wengraf suggests that it is the paradigm, exemplar or canon in the field which sets the standard for good practice (2001: 14). In animated documentary the idea of 'good practice' is problematic since there is no frame of reference only differing methodologies all grouped together under the all-inclusive term 'animated documentary'. Wengraf points out that the researcher needs to be clear what the purpose of the research is before deciding on a set of procedures and analytical framework which is 'fit for purpose' (ibid), and stresses the need to define clearly to oneself the type of outcome that is required.

Through previous practice and research I became interested in developing a more structured methodology for my practice with a transparent authenticating process. By its nature documentary, as a genre or as a concept, is constantly fluid and open to interpretation (Nichols, 1991:12). By using collaborative ethnography the form of animation with its extended and reflective production time can be used to benefit and deepen the documentary content. As has been noted by Paul Ward (2005: 94) the genre of animated documentary has an affinity with the collaborative process. If we refer back to Lassiter's definition of collaborative ethnography; '1. Ethical and moral responsibility to consultants, 2. Honesty about the field work process, 3. Accessible and dialogic writing, and 4. Collaborative reading, writing and co-interpretation of ethnographic texts with consultants' (2005: 77), these can all be assimilated into the practice of making animation collaboratively without any structural adaptation. Point three; 'accessible and dialogic writing', becomes an accessible and dialogic process of creation using writing but also interviews, correspondence, still and moving images. Similarly point four will is not confined to texts but to the production of collaboratively constructed animated documents.

When making non-fiction animation that represents another person's experience, the image itself can become a problematic area. Bill Nichols' dilemma that the 'distinctive formulation of the camera's (and filmmaker's) presence as absence, so common to classic narrative, poses problems of a peculiar nature in documentary' (1991:89) is increased when not only the film maker but the subject of the film is present yet absent from the frame. How can the audience know whether or not the image that they are seeing is mediated beyond all recognition from the subject's original intent when being interviewed? Nichols talks about
the interactive mode with an anxiety about how far the film maker can push it; "how far can participation go? How are the limits beyond which a film maker cannot go negotiated?" (1991:45) but this implies that the interactive mode is about the film maker pushing themselves into the film, not about inviting the subject to participate in the construction of the film. This methodology provides an explicit framework for inviting the interviewee/collaborator/consultant inside the materiality of the animation itself, and lets them unambiguously comment on and contribute to it. By using it the authenticating of the representation of the perceptual brain state becomes less contestable and more secure in its claim to documentary status, using elements of icon, index and symbol non-preferentially. When discussing their reactions with the collaborative consultants they would sometimes use signs interchangeably; for example Stephen described the nerve ending sensations in his phantom limbs in this way:

'the dots sometimes move like having bubbles under the skin, or even the idea that there are little creatures wriggling about inside'\textsuperscript{63}

I produced animation of the bubble phenomena and we worked on it for a while, refining the movement, speed and direction. However, when we moved onto the creatures burrowing under the skin Stephen explained that the two descriptions were of the same phenomena, just 'different mental pictures'\textsuperscript{64}. My assumption of the description was that they were iconic (undoubtedly influenced by the work done into audio-synaesthetic, where that was the case), was incorrect since the description was symbolic. I became aware that the collaborative consultants moved seamlessly between signs in explaining their qualic experiences, using whichever best described them. This non-preferential use of signs helps to explain, amplify and articulate the ways in which animated documentary is used to document interior brain states through moving image, and gives a transparent and accountable framework of reference.

\textsuperscript{63} Via e-mail correspondence (21st March 2012), see appendices.

\textsuperscript{64} Via e-mail (22nd April 2012), see appendices.
Contrasting methodologies: The 'animated interview' contrasted with a collaborative approach

A collaborative methodology is just one of the potential ways to use animation in a documentary context. It has been chosen as the basis for this study because it involves making animated documents the central concern, rather than using aural documents as the nucleus (which animation is parenthetically used to illustrate and illuminate in the 'animated interview' model). Privileging the aural index (as discussed in chapter one) as a model for structuring animated documentaries has developed from a perceived lack of direct indexical links in animation. A study of this 'animated interview' approach is included here to contextualise and contrast the practice made for this study in a wider contemporary and rapidly developing area. The comparison is not exact, since the films discussed are documentaries and the work made for this study are documents, but the central concern of both approaches is to use animation as the form to express documentary ideas.

As discussed previously, one of the key differences between (live action) documentary and animation is the way in which they present sound. Animation prioritises the image; documentary prioritises the sound (see Wells, Nichols). A popular route to claiming documentary status within animation is to take the documentary approach to sound; privileging of the index over the symbol or icon by segregating the index into the soundtrack and demoting the visual (animation) to support only what is heard. This can be done in various different ways; symbolically, iconically or a combination of the two. For example; in the film I Met The Walrus (Raskin, 2007), the symbol is heavily used to support the aural information (an indexical recording of an interview with John Lennon). John Lennon is heard to say that some kids at the interviewer's school were probably 'square'. He was using a common linguistic metaphor of the era, meaning that the students were rule-obeying and conservative. Whilst this is being said the visuals present a character literally turning into a square; tautologically visualising the metaphor in a way that does not express the culturally nuanced pejorative description. The symbol, or visual metaphor, has an important place in animation, it is one of the key tools of the form in representing complex concepts in what Paul Wells calls 'a more appealing or conducive image system' (1998: 84), but in this case we are not allowed to deduce the importance of the symbol for ourselves (as in Svankmejer's work for example) but have a simultaneous aural clarification.
Scott McCloud, in his deconstruction of the way comics works, calls this particular pairing a 'word specific combination', where the pictures illustrate but do not add to a largely complete language input (1991: 153). Animation used in this way becomes what Reichert calls 'a technique of direction and control' (2009: 284).

Another form of 'word specific combination' in 'animated interview' films would be animation that mimics straight live action, iconic imagery that replicates the pro-filmic. The animation is literally copying reality and bypassing the imaginative alternative perspectives that animation can provide. The use of 'talking heads' (a close up of a person talking directly to camera) is a familiar trope of live action documentary making, albeit one which is not always encouraged\(^6\), which is sometimes directly used in animated documentaries to emphasis the documentary status of the film.

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\(^6\) Under the subheading 'Lecturing Lacks Impact' Michael Rabinger in his practical text on how to direct live action documentary film exhorts student filmmakers to keep talking heads to a minimum (2009; 47-8).
McCloud also describes 'duo-specific combinations' where the words and images, where words and images send exactly the same message (ibid). This juxtapositioning of the image with sound yokes the visuals to the aural so completely that there is no space for any other reading to be made of the soundtrack other than a literal interpretation of what is said. This style of presentation is very commonly used in many other types of animated non-fiction (adverts, safety films etc.) where the icon and the symbol may be simultaneously used (as in the Virgin safety video still, below).
In practical terms the drawback of juxtapositioning visual and aural information is that it does not allow room for alternative interpretation, expansion of themes or revision of expression. It constructs the aural as an immovable text that must be adhered to in every detail. In an information film, which is carefully scripted to convey important data, the sanctity of the aural information may be paramount. However, when the aural is a minimally edited unscripted interview, staying so closely allied solely to the spoken word prioritises what the interviewee says rather than what they necessarily mean. Although it can have an important role in animated non-fiction such juxtapositioning of congruent sound and image is not the only way to present data and it does not necessarily convey the depth and scope of a project where the interviewee has been involved in different stages of the process. It also privileges the aural interview itself as the main repository for relaying information to the audience and relegates the image to a supporting role. Not every 'animated interview' film segregates the indexical in this way or makes the film so 'word-specific'. *Silence*, for example (Bringas & Yadin, 1998), is a film based on the aural testimony of Tana Ross, a holocaust survivor. The film does illustrate what she says iconically but it also uses symbolism to extend the scope of her story; for example drawing visual parallels between the Swedish railway worker and the Nazi prison guard, or the recurring visual theme of Jews as vermin, are not referenced in the aural but expand our reading and understanding of the film as a whole. Another example of animated interview film which does not over-
amplify the signification of the aural is *It's like That* (Southern Ladies Animation Group, S.L.A.G., 2003), a collectively made response to a (literal) radio interview with children held under the mandatory detention regulations first introduced in Australia in May 1992. They used collaborative production methods amongst the film makers66 (S.L.A.G. rather than an individual is credited as the director of the film) and although the aural was all the information they had about the individuals speaking they use an extended visual metaphor (a stylised bird motif) to augment the information and provide a holistic account of disparate experiences.

A collaborative methodology invites the interviewee to participate in the construction of the visual and temporal elements of the work where they have an opportunity to express themselves in a different way. Interviewees may not always be able or feel confident to express themselves verbally, or their verbal explanations of their situation may not be adequate to the task of summing up a complex experience. In the film *Abductees* (Vester, 1995) the interviewees discuss their claimed alien abduction experiences, some of the reports of which are elicited under hypnotic regression. The aural accounts alone sound far fetched and somewhat dubious but the inclusion of the drawings that the interviewees have done, some of which have been animated, to augment their accounts serve to intensify and extend their stories beyond the words that we hear.

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66 The collaborative process did not extend to the interviewees themselves as they were in detention centres and unavailable to speak to.
In Abductees not all of the information is given aurally but some is conveyed through writing on screen which is given not further verbal explanation and some is conveyed wordlessly just through imagery from which we are invited to draw our own conclusions. In this way Vester is demonstrating a dialogic methodology through involving his subjects more fully than just taking their words away to interpret, a practice that Lassiter criticises in the field of ethnographic research (2005:3) and which Fine describes as the 'slash and burn' approach of not spending enough time in the field but grabbing data and leaving (1999: 533) in relation to ethnographic study. At one point on the soundtrack of Abductees an interviewee is heard saying that the way the aliens moved "might be important for the animation" (Abductees, 1995: 4'46) demonstrating a clear shared intent to present a shared outcome in animated form.

By using collaboration as an important tool in; the development of the idea, the process of decision making about the visuals and structuring of the work, the interview itself and the lengthy feedback process, before finally signing off on the work as a valid and authentic representation of their noetic experience, the collaborative methodology allows for a deeper and more rounded comprehension of the interviewee's perspective than a purely illustrative and literal depiction of their words. Animated documentary has the potential to show what cannot be filmed rather than imitating what can.
Implementation of the methodology

A collaborative approach is key to this theory about how animated documentary can work in the context of representing interior brain states. Paul Ward describes how interactive and collaborative methods in animated documentaries 'push back the boundaries of documentary signification' (2005:96) and this is one of the important ways it can be done. By taking an approach that 'deliberately and explicitly emphasizes collaboration at every point in the ethnographic process' (Lassiter, 2005: 16) from conception of the project to field-work to making the work and then feeding back throughout the creative process, the subject of the film can become integrated and then re-integrated into the materiality of the film. The collaborative frame is the antithesis of the 'animated radio documentary' (Dreisson, 2007), where an indexical sound track is recorded and taken away to be animated separately. A collaborative frame would be one where the subject of the interview has an opportunity to have input into the image as well as the sound track; by drawing the imagery themselves, having the imagery based on their drawings or based on their descriptions of imagery. Taking a cue from the approach of anthropological collaborative ethnographers, like Luke Eric Lassiter, in this study the subjects of the film can become 'consultants' (2005: 8) on the external realisation of their own perceptual processing.

Collaboration in animated documentary film making is, as Lassiter points out about his field of ethnography, in many ways a natural by-product of the process (2005: 16). However, what this study attempts to do is to systematically use an overtly collaborative methodology; as Lassiter explains to move from 'incidental and conditional collaboration to the building of a more deliberate and explicit' collaborative practice (ibid). The intention is not to create a dogmatic and unyielding approach to all production of animated documentary but to explore what this genre can uniquely reveal when representing certain types of subject matter (the internal and subjective).

The process of turning dialogic aural and written material into visual language is one of translation. Benjamin says that the two concepts which govern the translation process are fidelity and licence (1955: 78). If the translation is too rigidly faithful to the original it can demolish its meaning entirely, for example by tautologically visualising the soundtrack in an animated documentary at the cost of our understanding of the wider meaning, and 'the
demand for literalness, whose justification is obvious, whose legitimate ground is quite obscure, must be understood in a more meaningful context' (1955: 78-9). As discussed earlier he says that translation must let the 'intentio' of the originator be clear (1955: 79). This intentionality becomes a shared goal developed in the rapport with the collaborative consultant; to visually document an intangible perceptual experience through a dialogic cycle, which is at the centre of the translation process (this parallels the point earlier about animation evoking rather than representing (Honess Roe, 2013: 121)). The analogy drawn here between translating one language to another is not exact, since the translation here is from the original perceptual experience through language into the animated form, but it is useful since Benjamin is talking about negotiating the tension between 'fidelity and licence'. This is germane to the issues brought up by using animation to document, and in the ways which the dialogic process can be used to test the balance between input from the collaborative consultant and facilitator. He says that the fidelity of the translation should lie in the attempt to reflect the original intention of the work not the word for word literal translation; 'a real translation is transparent; it does not cover the original, does not block its light, but allows the pure language, as though reinforced by its own medium, to shine upon the original all the more fully' (1955: 79).

This collaboratively ethnographic practice is based on small-scale individual case studies, interviews with subjects who either have or are researching the brain states chosen. The states discussed will be synaesthesia, prosopagnosia ('face-blindness') and phantom limb syndrome. As previously discussed, my definition of an interior brain state refers to the processing of experiences of the external world (Dennet, 1991: 45). These brain states have been chosen because they relate to the research question in the following ways. Firstly they are experienced entirely internally with no visual evidence of their existence, therefore a non-photographic representation would be the only way of visually representing that brain state. Secondly each internal response is unique to the individual and so only that person can tell if the representation of their state is 'correct'. Finally, as far as I know, these states have never been explicitly represented in animated film before so it is new subject matter.

67 The practice element for this brain state has already been completed prior to this PhD; An Eyeful of Sound (2010).
It is important to reiterate that it is not within the scope or intention of this study to attempt to create original work in the field of neuro-science. It is however informed by developments in neuro-psychology and work alongside current research in this area being undertaken by Dr Ashok Jansari at the University of East London, and Dr Viva Goller and Dr Jamie Ward at the University of Sussex, amongst others. Qualitative feedback from this community has been helpful in providing expertise to authenticate the animated documents produced placing the study in a broader scientific context. This project is continuing to engage with this larger neuro-scientific community through conferences, screenings of the documents and discussion forums.
Chapter 4:
Practice: developing the collaborative cycle

'Art does not reproduce the visible; rather, it makes visible.'
- Paul Klee

Introduction

The critical context for this study has been established and the limitations of alternative methodologies explored. In this section the application of the collaboratively ethnographic method will be explored. Because this part of the study is concerned with developing the tools to expand the practice, the language necessarily becomes more discursive. There is a shift in registers in order to encompass the full range of materials referenced, and this polyvocality echoes the creative tension between research and practice, film maker and academic.

The practice element is the collaborative workflow, comprising of investigation of two perceptual brain states, using a collaborative approach to making the work and using (primarily) visual clips to communicate them. The aim and tangible culmination of this work is a series of animated 'documents', varying in length from a few seconds to half a minute. Each document was made with collaborative consultants in a process that was designed to be as open, responsive and transparent as possible in order to authenticate the visual material as valid representations of their experience, and each represents a step on the path to a meaningful representation of the collaborative consultant's perceptual internal state.

Documentary theorist Rozenkrantz (2011) skims over animated documentary used collaboratively; acknowledging Ward's observations (2005: 94-5) about its tendency to be used in this way but essentially dismissing the collaborative element in the rest of his discussion and saying that animation provides 'certain difficulties of representation that separates it from live-action film' (Rozenkrantz, 2011) since it cannot provide objective and indexical 'reality'. By developing this methodology this research will show that animation
can be used to credibly document perceptual states using a rigorous and transparent process of authentication.

Developing my own practice methodology: The Collaborative Cycle

‘collaborate… to work in association (with); to assist or co-operate’
- Chambers Dictionary (2008)

Previous projects and how they apply
Experience from previous projects via practitioner-led enquiry (Mcintyre, 2006: 4) was able to provide important data about starting the decision making process and how to approach this cross-disciplinary area. Working on the synaesthesia project (2005-10) and doubled up (2004), meant that there was a clearer understanding of the kind of remit this work might have within a scientific sphere and how best to embark on it. Collaborating with consultants over a long period of time, with the attendant demands made on their time, patience and ability to respond had also given insights into how to submit the request to become involved with the work in a way that would be honest, realistic and convenient for the person involved. Overall it was an important part of the process that the collaborative consultants and consulting scientists be well chosen, and if possible that peer-based relationships were established rather than allow a hierarchical network to develop. It was evident in this study that the collaborative aspect of the work was key to the development of a methodology which could authentically claim to represent the interviewees' experiences. The practice attempts to shift focus away from the overburdened indexical signifier in order to differently 'authenticate' the work's documentary status. By dealing with internal, subjective and unusual perceptual states the practice intends to present what is beneath, not on, the surface and to corroborate that evidence with an in depth collaborative methodology that can articulate the interviewees' experiences more fluently than a visual metaphor based discourse. The condensation of ideas read about in the theory research part of this study have fed into developing the practice part, dictating a more

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68 Where I liaised with the Twin & Multiple Birth Association at Queen Charlotte Hospital, London.
69 Not to imply that I (the facilitator) was the one choosing, in fact the collaborative consultants were primarily self selected, so it was important that they were choosing this project as one that would be interesting, helpful or illuminating to them.
systematic approach to the methods through a more coherent methodology. There was the opportunity to make plenty of mistakes during the synaesthesia project which could then be learned from whilst designing and carrying out this new study. The development of the synaesthesia project will be dealt with more fully in the next chapter.

Problems of hierarchy which this method proposes to solve

There are perils which emerge in the developing of rapport between interviewer and interviewee during the collection of documentary data. Robert Coles cites a woman who had been the subject of many research projects complaining that the process is too exploitative, and the documentarists are duplicitous: pretending to be friendly at first but once they have permission becoming rude and bossy, desperate to get their 'data' and be off as soon as they can (Coles, 1997:77-79). Coles quotes a documentary photographer feeling guilty about the potentially exploitative power balance;

'we do our 'documentary work', and we get recognition, and we build our lives up, our careers - and they, there's nothing in it for them.' (Coles, 1997: 83).

The balance of power therefore is seen to be too much in favour of the documentary maker, who can grab their words or images and leave to use that information as they please without the need to consult the interviewee any further. One of the collaborative consultants on the prosopagnosia project described her negative past experience with a freelance journalist. They had interviewed her for a national newspaper and written a well balanced and informative article about her face blindness. However, the same journalist had subsequently used the same interview data to write a second article, this time for a national women's weekly magazine and without explicit permission, which dwelt on the difficulties and problems the prosopagnosic had experienced in a flagrantly exaggerated and prurient tabloid style ('My face-blind hell' type of hyperbole), using quotes out of context and a photo of her looking sad. There was nothing actually untrue in the second article but the negative, prurient and personal nature of the piece was exactly the opposite of what the interviewee would have liked to have been portrayed. As an ex-medical professional having survived and successfully dealt with encephalitis and prosopagnosia she wanted to give hope and practical advice to others. Journalism and documentary work are not synonymous but this story illustrates that way in which the indexical trace can be used without question and yet a 'truthful' portrayal, from the perspective of the person depicted, has not been
achieved. By using a collaborative methodology the person being represented has the opportunity to comment, re-frame and change the work, occupying an engaged role in the process and transforming from the passive ('subject', 'interviewee') to the actively involved ('collaborative consultant'). This shift in power balance has an equivalent effect on the role of the 'facilitator'; previously film maker or director, whose authorial voice is devolved (as we saw in chapter two) and who is absolved of creative responsibility for the duration of the documenting process. Whatever happens to the animated documents afterwards (they may, for example, be made into a film as with *An Eyeful of Sound*), whilst engaged in the collaborative cycle the facilitator privileges the data from the collaborative consultants over every personal creative impulse.

Limitations in the study that should be noted

Animation is a sustained and time-consuming process. For independent animators or small animation teams the short form is the only viable option, since the work takes so long to make (one second of screen time consists of 25 frames). This is a salient factor in applying animation to a collaborative process such as the one suggested here, since there is so much room in the production process for collaboration to take place. However it also means that an over-view of the slow working practice must be made clear to collaborative consultants, both research scientists and laypeople. Because animation has tended to be associated with children (Wells, 1998:3) many people assume that it will automatically be comedic, quick to make and ultimately inconsequential. Antithetically however animation is also cherished by many as a link to childhood and there is often a residual affection for the form which can be very helpful when involving collaborators in a new project.

This practice is experimental, testing the thesis, so inevitably it may not work. The brain trait of audio-visual synaesthesia was, after all, a relatively straightforward one to try to authentically represent visually; an extra visual perceptual processing which could be double checked for authenticity by them as easily as someone without synaesthesia might check the colour of their socks. In the two new sets of animated clips which have been made as the remaining part of this PhD by practice, the two states of prosopagnosia (a lack of perceptual visual processing), and phantom limb syndrome (an excess of perceptual but not visual processing), are not so easily described and these tricky arenas are where the investigations and interrogations of the animated document will take place.
Conceiving the collaborative cycle: a diagrammatic evolution

One of the key elements that came from the literature and previous practice experience was the need for clear and accessible unstructured communication channels. Whilst during the synaesthesia project this had happened on an ad hoc basis one of the aims for this project was to systematise the process more clearly so that the back and forth of information between collaborative consultants and facilitator was flowing and uninhibited. This would also have the effect of making the collaborative process more transparent and therefore potentially more accountable.

Pawson (1996: 298) says that in the unstructured interview researchers 'are accused of selecting from this massive flow of information and thus fitting together small fragments of the respondent's utterances into their own preferred explanatory framework. Whilst the data is supposed to emerge in 'mutual' understanding, the researcher's theory is never clearly on view to the subject'.

This may be true if the initial interview is unstructured but by selecting semi-structured interviews as my starting point and then allowing the collaborative consultants to direct the subsequent conversation the intention was to make the framework of discussion more transparent. Inevitably the medium for this information flow was e-mail, partly for the immediacy of the responses and partly because of the geographical distances between the consultants (collaborative and scientific) and the facilitator. During the synaesthesia project there was an attempt to co-author a blog with collaborators involved in the project. Ultimately though it was unsuccessful as a way of encapsulating evidence and data due to a combination of lack of digital technical confidence and the fact that the collaborative consultants were not engaged with the project all the time so their experience was too fractured to make regular updates. In this project it was clear that the facilitator's role would be one of actively attempting to capture information and feeding it back rather than waiting for it to arrive unsolicited. Almost immediately it seemed appropriate to think of this data collection and dissemination as cyclical since the process would need to be repeated so often in order to gain a good understanding of the collaborative consultant's impressions and opinions, see figure 1 for an early model of this process.
Wengraf says that qualitative interview research always needs contextual info; the data only comes from one time and one place (2001:1). Whilst this is true, implementing a cyclical model to this type of data collection bestows depth and breadth, allowing revision,
correction and reworking to take place over time. It was clear though that this needed to be expressed in a cyclical model;

(14) Figure 2, visual conceptualisation of the cycle (2011b)

Figure 2 expresses more clearly the cyclical feedback process but does not include context or the possibility of an eventual outcome, which figures 3 (a & b) attempted to address.

Following two pages; (15) Figures 3a & 3b, visual conceptualisations of the collaborative cycle, (2012)
Out of Sight: Using animation to document perceptual brain states
Pawson's theory-driven interview model here provides some interesting insights into constructing a model of the collaborative cycle since there are some shared ideas and goals. He describes his research role as counselling the 'information flow' in Figure V (above). He says that its 'key aspect is the creation of a situation in which the theoretical postulates/conceptual structures under investigation are open for inspection in a way that allows the respondent to make an informed and critical account of them.' (1996: 313). This was the intention in our collaborative cycle, to allow enough transparency so that the collaborative consultant (the 'subject' in Pawson's model) has the hegemonic space to be able to halt a particular line of visual enquiry if it does not serve their purpose. Pawson's diagram is not correct for this project however since its aim is to democratise the research process by opening up the theory to the subjects to allow them to develop a shared outcome (the document). His model has a pedagogic function; educating the 'subjects' to understand the conceptual structure and the context of the (written, academic) outcome.
The researcher retains their power\textsuperscript{70} and invites or allows the subject to enter the study through the assimilation of the researcher's knowledge. In contrast, by using the collaborative cycle the aim of this study is to allow the collaborative consultant to drive the outcome, subsuming the researcher into a facilitator role who initiates and expedites the process but does not overtly creatively influence the outcome. The outcome itself is not couched in a conceptual academic framework but is a tangible animated document that can be assessed without specialist training.

Note that the researcher is described as having 'theories' whilst the subject merely has 'ideas'. The power relationship is implicit; the researcher 'teaches' whilst the subject 'learns'.

\textsuperscript{70} Next page; (17) Figure 4. The collaborative cycle (2013)
Out of Sight: Using animation to document perceptual brain states

[Diagram showing the relationship between facilitator, consultant scientists, collaborative consultants, and subject area with terms such as sensory empirical knowledge, intellectual evaluated knowledge, collaborative material created, and visual material feedback.]
Conducting initial research

This section will discuss the first forays into researching more generally before examining specific issues to do with each brain state in the subsequent case study chapters.

Once the collaborative consultants in the areas of prosopagnosia and phantom limb syndrome had been selected the elementary research consisted of watching documentaries on the subjects and reading introductory texts and articles to get a layperson's perspective.\(^\text{71}\) (See Ramachandran, Dennet, Carter and Radiolab). There was also the issue of whether there had been any art or animated film about these brain states, since the work needed to be as original as possible. I found static art (photography and painting, discussed in more depth later) but no animated work. When approaching research in these areas I instinctively took a hypothetico-inductivist (Wengraf, 2001: 2) model along the lines of grounded theory, of attempting to collect relevant data and then attempting to glean conclusions (hypothesising animated re-presentations) from them. However as the project developed, particularly with the prosopagnosia work, it became clear that visual theories would need to be developed about (rather than from) the perceptual experiences in order to present them on screen. Therefore the research became more deductivist in tone as visual theories were developed based on the research which could be approved or rejected via the collaborative cycle (ibid). For Wengraf this oscillation between deductivist and inductivist approaches is completely natural. He argues that the explanation of how a researcher can be both at different times (or even simultaneously) in the project is the difference between strategy and tactics, or what Bateson argues as loose and tight thinking (2001: 3). Retrospectively it seems clear that the propensity to develop the style of the study throughout the process (working iterative-inductively), as long as the developments are made clear to all the collaborative consultants at every stage, is key to using the collaborative cycle in this way. The style of the study is of less importance than the fact that whatever it is: it is clear to everyone involved.

\(^\text{71}\) For example looking at the prosopagnosia research website, http://www.faceblind.org/ <accessed October 2010> where I took the online face tests.
Finding subject specialists and procuring potential interviewees

At this stage there was enough preliminary information to draw up a rough list of topics to discuss with the potential collaborative consultants and consulting scientists (see appendices for lists of initial questions for the consultant scientists). Subsequently researchers in the area based on the articles and texts read (see Ramachandran et al) were reviewed and a network of previously acquired contacts and colleagues was examined. The previous connection with Dr Jamie Ward at Sussex referred the project to Viva Goller, a PhD student who was doing research into phantom limb syndrome, and participation in synaesthesia academic conferences had provided the connection of Dr Ashok Jansari, a researcher in prosopagnosia at the University of East London. Meetings were set up with area specialists (potential consulting scientists for the project) and what followed with each was a substantial meeting where the subject was discussed at length and in much more depth, and the request for consulting help was tabled (note that the initial questions for these interviews were more wide ranging and open ended than the subsequent list of questions, see appendices). These sessions were an important basis for more specific case study information that the consulting scientists had worked on, which was simultaneously the start of contacting a group of collaborative consultants and also a personalisation of the topics under discussion. The consulting scientists could provide information on unusual aspects of the real cases which were not written up in the literature\(^{72}\) and allowed initial creative conceptualisations about the project to begin in ways that had not been open before. They also had a much more sensitive understanding of the actual needs of the real collaborators outside of their specific perceptual brain state related issues, since in both cases the consulting scientists had a group of potential interviewees they thought would be interested in being involved from their previous or current research in this area. Both ended up e-mailing a callout to their pool of potential collaborative consultants, so the group was essentially self selected with no particular criteria in mind except that they were self-identified with the perceptual brain state. The consulting scientists could give useful recommendations about the way to approach collaborative consultants, which was particularly useful in dealing with the people with prosopagnosia who each had different strategies for approaching and recalling people they had met.

\(^{72}\) For example Viva told me about a women who had been born with truncated finger stumps on one hand instead of fingers which had been amputated at birth 'for cosmetic reasons'. The women usually had phantom finger nubs but when she put a glove on that hand she felt full length phantom fingers 'growing' inside the glove.
Conducting secondary research

This meeting led to conducting secondary research, which consisted of more directed reading into the particular areas they had pointed towards, for example papers and websites to read, with reference to the insights that they had provided about the most fruitful way to approach the interviews. It also led to a re-drafting of the original topic list and the creation of a more formal list of questions (see appendices for initial lists for interviewees). At this stage the consulting scientists approached their potential interviewee contacts, introducing the study after which the suggested interviewees could be approached directly to arrange to meet. In tandem with this also looked for my own collaborative consultants independently. Ultimately there were three collaborative consultants chosen for each project; five were recommended by consulting scientists and one was found independently. Finally the lists of questions were tailored individually for the collaborative consultants with prosopagnosia, because their situations were so diverse (one had congenital prosopagnosia, whilst of the other two one had developed it after contracting encephalitis and the other through a traumatic brain event - both of which had caused other related issues that I wanted to be sensitive to). The phantom limb interviewees were all sent the same list of questions because from discussion with Dr Goller it was clear that there was a strong similarity not only in phantom limb syndrome as experiences itself but also of the particular phantom limbs in the case studies she had given me (two of the interviewees had each lost a left leg in the same motorcycle accident, for example).

73 I found Andy, who has congenital prosopagnosia, through a callout on Facebook. He is an ex colleague of mine who I had no idea had prosopagnosia. He knew he had it but I have met several friends and acquaintances since who only realise that they have it after discuss of the subject with me. This matches current research (Susilo et al, 2013) which shows that congenital prosopagnosia is much more prevalent than once thought.
Devising semi-structured interviews: initiating the collaborative cycle

The interviewees were given an explicit outline of the scope of the collaborative work to be undertaken via e-mail before the first meeting (see below), and then the university ethics forms to sign before the interview took place. As previously described one of the prosopagnosic collaborative consultants had had a very difficult time with unethical use of her interview materials in the past so this was an important assurance. The interviewees were geographically quite scattered, so the interviewing was done in chunks of time, for example the phantom limb interviewees were based in East and West Sussex so the interviews were arranged over a two day period (14th and 15th July 2011). The prosopagnosia interviewees were even more scattered (Harlow, Peterborough and Wolverhampton) so those had to be done separately as suited each individual.

Before each interview each potential collaborative consultant was contacted and it was made as clear as possible (via e-mail discussion) what the parameters of their involvement was going to be and what they should expect from the collaborative process. For example, from an e-mail to Stephen (phantom limb collaborative consultant);

'The interview itself would be sound only as I shall be animating the images. Animation is a slow and laborious process (it takes 25 pictures to make 1 second of moving image!) so this project won't be quick...Part of my work method with animated documentaries is to really include the interviewees in my working process. Don't worry, I'm not going to over-load you with stuff, but as I start to develop the visuals to go with your words I think it is important that what I'm showing is 'correct', i.e. that it correctly reflects your experiences of having a phantom limb. So, I may send a short animated clip, some still images, or even just some sound that I have edited together, to make sure that you agree and am happy with my portrayal of what you have said' (from Sam Moore, 7th April 2011).

The initial interview would be the basis for all the subsequent correspondence and interaction and the whole of the collaborative cycle would be contingent on both parties feeling comfortable with the exchange. It was essential that the emphasis in the meetings was on the expertise of the interviewee in knowledge of their own experience, the meeting itself was relaxed and informal with no time constraints, they felt safe and able to say

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74 See appendices.
whatever they liked and there were enough questions to guide them into a deeper explanation of their experiences. It was also important that the questions were not so structured and close ended that they were not able to allow expression of different (as yet unconsidered) aspects of the perceptual state. The semi-structured nature of the interviews meant that there was a specific framework to the interview but there had to be space for the interviewee to discuss or explain further within the confines of that structure. Some of the questions were not relevant\(^7\) and at times all of the interviewees' answers devolved into more specific discussion of their interests and concerns, but this diversion often led to more interesting revelations about their experiences which could be pursued later. Maxwell (1996:4) describes design in qualitative research as 'an iterative process that involves 'tacking' back and forth between the different components of the design, assessing the implications of purposes, theory, research questions, and validity threats for one another'. In this sense validity threats would be how the researcher might make incorrect analytical conclusions, what other plausible explanations could there be for these conclusions and how would they deal with them. In the adapted model that was used for this project the initial interview was just the beginning of a dialogic exchange where the validity threats could be dealt with by the collaborative consultant themselves. The format chosen for the initial interviews therefore was the semi-structured model, where there are planned questions but also space for supplementary spontaneous questions arising from the narrative flow of discussion. These spontaneous discussions would often have adventitious outcomes, for example a discussion based on a comment about Ramachandran's work about remapping sensory input (Ramachandran, 1998:45) led to Dave's experience of sitting inside an enormous foot (see chapter five and animated documents). Tom Wengraf argues that semi structured interviews are more difficult for the researcher than fully structured interviews because they require more preparation beforehand, creativity during and evaluation afterwards. He says they are particularly useful for biographic-narrative interviews like the ones done here, where you can only prepare so many questions in advance and need to build in flexibility (2001: 5). For the purposes of this study semi-structured interviews were the only way to deal with the material since each collaborative consultant’s perceptual processing would be experienced differently (to a greater or lesser

\(^7\) For example 'do you recognise animal faces?' did not engage two of the collaborative consultants with prosopagnosia especially, but the third had not considered it before and was fascinated by his recognition of the family dog in photos where he could not identify his own mother, leading to further discussion of the topic of animal versus human facial recognition.
extent), and the preparation/creativity/evaluation trichotomy that Wengraf describes is vital to the collaborative process undertaken.\(^7\)

The interviews themselves were as diverse as the people being interviewed, and working on the synaesthesia project had provided preparation of what the process would be like (Wengraf, 2001: 80). During interview the focus was on gathering as much referent material as possible on their subjective perceptual state from the collaborative consultants. They each had their own agenda, and each understood the perceptual state in as much as it affected their everyday lives. As Wengraf discusses, the topic being referred to (prosopagnosia for example) may be assumed to be understood by both parties but may not in fact if they each interpret it slightly differently (2001: 46). Some of the collaborative consultants had other perceptual and physical issues which were apparently unrelated to the referent but to them these were all part of the same bundle of subjective noetic experiences. Two of the collaborative consultants with prosopagnosia had experienced traumatic events which led to their profound acquired prosopagnosia, and for them the experience of contracting prosopagnosia was inextricably synonymous with that event. The strategy for dealing with this was to keep the questions as focussed on the prosopagnosia as possible and whilst they inevitably discussed it in the wider context of their trauma the subsequent questions were all related back to prosopagnosia.

All of the collaborative consultants had been interviewed in the past by research students or scientists, so they all had experience of the process of being interviewed, along with the altruistic nature which would be needed to donate time and effort in explaining their perceptual brain state to random interested parties. The collaborative nature of this particular interview process meant taking a slightly different approach to more standard structured or semi structured interviews. Ray Pawson (1996: 299) advocates a theory-driven model of semi-structured interview, so the researcher’s theory is the topic of the interview, and the interviewee is educated in the theory well enough (by the researcher) to prove or deny that theory. The model that thesis suggests is that the topic of the

\(^7\) The personality of the collaborative consultant also made a huge difference to the outcome of the interview and the amount of diversions discussed; Andy and I were ex work colleagues and have an existing friendship so our discussion was based on a series of tacit understandings, Dave had a lively interest in all things scientific and our conversation spanned astrophysics, engineering and philosophy, whilst David (who does motivational speaking as part of his recovery process) was much less guided by the questions which were only a starting point for a plethora of interesting related stories.
interview (prosopagnosia, phantom limb syndrome, synaesthesia) is one which the interviewee is an expert in, and the outcome is to adequately evoke the noetic experience of the topic. The researcher must use their knowledge to represent the experience to the satisfaction of the interviewee. In this case the only theory driving the interview is that a visual representation of the interviewee’s perceptual state is attainable, and the interview process is a way of the two of us can attempt to prove or disprove and refine that theory. Pawson's suggestion is that the interviewer enlists the help of the interviewee to share the labour inherent in the process by teaching the interviewee the conceptual language of research, since between them 'the researcher and subject know a great deal about their subject matters, the trick is to get both knowledge domains - 'scholarship' and 'savvy' - working in the same direction.' (1996: 303). Because this study is from a visual perspective, and the research outcome is expressed quite differently from written conceptual research, the discussion was about perceptual experiences and the language which the collaborative consultants were invited to use to reach our common goal was primarily sensory (e.g. Can you visualise your phantom limb? What do you see when you look in the mirror? see appendices for full lists of questions) rather than structured interviews which are more usually used in neuropsychology. Also once the preliminary semi-structured interviews had taken place the collaborative consultants were aware that they would be asked to comment and discuss the visual (static or animated) responses to their subjective perspective. A familiar comment stemming from these visually inflected enquiries was that they had never given the questions being asked that much thought, no one had asked them this before, they didn't know how certain things felt because they had been asked about it before during their involvement in more conventional scientific research with the consultant scientists. For example; 'what is the texture or colour of the nerve endings you describe feeling in your phantom foot?' Stephen said, 'Apart from talking to you, I never really attempt to describe it to anyone, assuming most people would have only the tiniest interest!' (19th April 2012, via e-mail). This line of enquiry led to some interesting and exciting discoveries during the interview itself, such as Dave’s discovery that he can make his phantom foot grow until it encapsulates his entire body, and Andy suddenly realising that it was not 'normal' to be able to recognise your dog in family photos but not your mother.

77 For example see these on line test [http://www.testmybrain.org](http://www.testmybrain.org) which more correctly represent the kind of yes/no and picture recognition structured interviews which create the data used by neuropsychologists.
Setting up the collaboration process

It was very important that the collaborative consultants understood the scope of the commitment they were being asked to make, which was a protracted creative process (partially because it was animated, partially because of the collaborative methodology, see e-mail to Stephen in appendices 7th April 2011). It would also demand more input from them than they may have been used to during the neuro-scientific data collection they had taken part in before (computer based visual tests for prosopagnosia or structured interviews for phantom limb syndrome), and their continued input would be required, as explained in this preliminary e-mail;

'It is important to make it clear that you don’t have to choose a 'right' one out of these, this is just a starting point for our discussion about the way in which you see faces. This is a process of collaboration with you and any feedback you have will be helpful. You can't be too fussy or too specific! Once the first round of feedback is in I will be able to make changes, scrap ideas or generate new ones, and this back and forth conversation will happen (slowly) over time, directed and contributed to by you. I anticipate making separate animations for all three of you since your prosopagnosia comes from three different sources, so in the future you will probably get individual communication about the work we’re making together.78

It was important that this commitment was made as explicit as possible, to facilitate what Ray Pawson calls the ‘information flow’ (1996: 313). They also needed to understand the slow and laborious nature of animation (which many people misunderstand) and therefore the ways in which feedback might become disjointed over long periods of time between correspondence, which was an experience gleaned from the synaesthesia project.

Once the one to one interviews were completed and recorded the information could be taken back to my studio and begun to be worked on, attempting to make visual representation of their subjective sensations. As developed in the methodological model, the collaborative consultants and the facilitator had to have an easy and fluid channel of communication so that thoughts and ideas could be reacted to and implemented swiftly and without disruption to the two way flow of information. For example, in Dave's enormous

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78 This is from an e-mail sent to potential collaborative consultants, 30th November 2011.
foot clip issues of scale were key, and a rapid exchange of revisions and assessment was extremely helpful in fuelling communication;

'23rd January 2012
Hi Dave
here's the next rough pass at it, have a look and see what you think. http://vimeo.com/35516833 password: silver
Is the final foot large enough? Not sure if it has the proper 'enveloping' quality...?
Sam

23rd January 2012
Hi Sam
Yes that is far more like it would appear to an onlooker, the final foot size could be doubled I think as I am fully enclosed and centred within the image.
Brilliant work hope it is going well for the others to.
Dave'
(E-mail correspondence between facilitator and collaborative consultant)

In the one-to-one sessions they had been asked if they were willing to be contacted via e-mail with developments and for comments and in principal they were all amenable to this method. E-mail was used to contact them for updates about how the project was advancing, to expand on comments made in the original interview and to ask specific questions. Links to moving image work in progress were also e-mailed, hosted on Vimeo and password protected. It was made clear that the video clips were private, and apart from PhD supervisors and examiners, they would not be seen by anyone until they were 'correct': as a visual representation they were happy with.
Chapter 5: Case Studies

'The little bit (two inches wide) of ivory on which I work with so fine a brush as produces little effect after much labour.'
- Jane Austen

Introduction

Having clarified the application of the methodology and the processes leading to the design chosen in order to best verify the central thesis of this study, this chapter is concerned with presenting the specific case studies. Whilst the common elements of the methodology design have been discussed it should be clear from the discussion so far that the nature of the collaborative cycle is to be responsive and transparent to the people collaborating on it so therefore their individual needs and concerns are different in each case study.

There are commonalities in the work described though. The clips are experiments in visually representing an internal subjective state which does not manifest visually. The findings gathered from the collaborative consultant in response to each clip cumulatively inform and shape the representation created in the next clip, with the ultimate intention of expressing an adequate representation as gauged by the collaborative consultants. Instead of quickly arriving at a conclusion based solely on the aural evidence (as discussed in the section on contrasting methodologies) the objective was to fully utilise and exploit the (always lengthy) animation production process in order to make a more fully rounded visual expression of a subjectively experienced perceptual brain state through conversation and collaborative discussion. The clips were made in response to firstly an in-depth interview and subsequently an e-mail correspondence with the collaborative consultants (these correspondences are reproduced in full in the appendices of this work). During the process the collaborative consultants were shown still images (sketches) and animated rough passes of the clips which they commented on and suggested amendments for in an incremental process before the finished document was arrived at (and – crucially - considered 'finished' at the discretion of the collaborative consultant only, not the
facilitator). The clips are mainly made in two dimensional digitally drawn animation, although there is some use of compositing software (such as After Effects and Motion) in order to bring a three dimensional element to some of the clips.

(18) Image from Dave's final phantom limb sequence, made in 2D and imported into a Motion (digitally composited) environment, with the inclusion of layers in a 3D environment, shadows and reflections to make it appear more three dimensional.

The work is presented online in an attempt to allow the viewer to move between the clips, correspondence and images more easily than a linear narrative would. There is also a 20 minute collated piece for each subjective state worked on, presenting the findings and correspondence in chronological order. This is included to give the viewer a sense of the development of the work and an understanding of the way in which the collaborative cycle shaped the final documents.
Case study: Audio-visual synaesthesia

Introduction
This case study is included here because the subject and methodology unites so aptly with the focus of this research. It was not made as part of this PhD study, but it is included in the practice because of its pertinence to the central question. This film, and particularly the process of making it, inspired this doctoral study. It provides an opportunity to investigate the determinative methodology we are discussing in this project as it was developed. The following distillation of the work is by necessity a brief overview of the projects as they relate to the practice.

The short film *An Eyeful of Sound* was completed in 2010 after 3 years of production and 2 years of research and development on the project *Synaesthesia and Sound* (2005-7), both funded by the Wellcome Trust, collaborating with neuro-psychologist and leading synaesthesia researcher Dr Jamie Ward, The New London Orchestra and a group of people with audio-visual synaesthesia. Composer and sound designer Adam Goddard, producer Joshka Wessels, 3D animator Omid Ghanat-Abady and sound recordist George Beesley also worked on the film project.

Synaesthesia was first studied in the late 19th and early 20th centuries but then had a hiatus for almost 50 years when very little was published on the subject (Harrison, 2001: 26). It has enjoyed a resurgence in interest in recent years, according to Harrison 'the rise of cognitive psychology in the 1960s allowed the psychological (and neuro-scientific) community to indulge once again in speculation about the nature of 'states of mind'' (2001:53), and the use of fMRI scanning to locate types of synaesthesia-induced activity in the brain (Nunn et al, 2002) gave an indexical trace of what before may have been previously dismissed as 'over imagination'. Synaesthesia is now recognised as a documented brain trait that can give valuable broader insights into how everyone's brains work.

Synaesthesia is experienced uniquely by each person who has it; whilst a C note played on a cello may be appear as a gold silky sinuous shape with metallic glints moving from left to right to one synaesthetic person, to another (with the same kind of synaesthesia) it may be a rough brown hairy rug vibrating at waist level.
An Eyeful of Sound

The galvanising idea for this film was to use animation to convey to the audience the intensely subjective and immersive experience of those who process the world this way; to show not tell the audience what having this extra-sensory processing is like. It is important to note that there are very few documented cases of people who experience their synaesthetic status as any kind of drawback or disability. Indeed, as Jamie Ward (2008: 3) notes; 'On the contrary, to a synaesthete, it seems like there is something absent in the experiences of the people around them'. When brain states are discussed they are often seen as debilitating, taking the 'sufferer' away from the ideal 'norm'. This film was an attempt to turn the uniquely subjective synaesthetic visuals that were triggered in the interviewees' brains by sound into accurate visual external representations. This section looks at the ways in which making this film fostered the nucleus of the methodology which was then used in the subsequent PhD study, modifying some of the conventional methodologies in this genre.

(19) Still from An Eyeful of Sound (2010)
Director or facilitator

In order to make this film the usual perspective of artist/director had to be shifted. *An Eyeful of Sound* was to be an animated documentary, ‘a creative treatment of actuality’ in its broadest sense. It was intended to immerse the audience in the experience of synaesthesia. The role of artist therefore became aligned more with the role of a facilitator or reporter, suppressing personal artistic intent in order to better represent to an audience what the interviewees were explaining. For example when initially collecting sounds for the interviewees to react to we discussed with them which sounds would induce their synaesthesia most strongly (Julie has a particular fondness for the sound of a goat eating carrots for example). We collected around sixty sound recordings of everyday sounds and then used three methods to triangulate their synaesthetic responses to the stimuli; playing sound to the interviewees over headphones and get them to describe it verbally (which was recorded), secondly to get them to draw or paint a picture of the sound as they heard it, and finally to choose the exact colours of the sound from a Munsell colour chart. Thus the sounds that the composer and sound designer would be using in the sound track could be cross-referenced visually from this evidence and the sound could be animated ‘correctly’ from that synaesthetic person’s perspective. Once a digital image had been made of the synaesthetic response it would be sent back to that synaesthetic person for comment and critique; to see how accurate it was. In this way we attempted to incrementally facilitate an external representation of their necessarily internal and subjective experience. This collaborative negotiation on the ways in which we collected and recorded the initial material was not consciously formulated as such but emerged as a development of the research and development project Dr Ward and I had done earlier (*Synaesthesia and Sound*, 2005-7) together where these working methods evolved.

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79 John Grierson, famously defining the new genre of documentary in his review of *Moana*, New York Sun, 1926.

80 This triangulating of data using a colour chart was very useful and relevant for a visual perceptual process like audio-visual synaesthesia but was not relevant for prosopagnosia (a lack of visual processing) and phantom limb syndrome (a kinaesthetic sensory experience). Some of the collaborative consultants in the PhD study did provide drawings in an attempt to better convert their experience but it was not a primary data collection tool since it proved very difficult for them.
Undercutting of hierarchical structure

The film also includes interview material with Dr Jamie Ward to give another perspective of the way in which synaesthesia might work in the brain. This provided a counterpoint to the intensely subjective stance, presenting a contextualising perspective. The lack of hierarchy was a conscious choice in the presentation of the interviewees; although the words of a leading scientist in the field are heard, his opinion is not valued more highly than the experiences of the other interviewees who are edited to comment on and occasionally contradict his words. This was to under-cut any notion of a 'voice of god'\[^{81}\] narrator, and also to represent a non-synaesthete in the film as a counterpoint to the highly synaesthetic reactions. At one point he says rather wistfully; 'If I were to have synaesthesia I would have the coloured music variety…to actually experience that way I think would be wonderful'. He clearly does not experience synaesthesia yet the audience can via the mimetic animation (Honess Roe, 2014:23). By using animation, which is primarily a visual medium, the authority of the verbal (which is the domain of the documentary) can be counter-balanced.

\[^{81}\] A pejorative term used in live action documentary, radio and theatre where the voice-over narrator is presented as an all knowing, disembodied and anonymous voice. The term is thought to date back to 1930s US radio news broadcast programmes.
and allow the actual (visual) experience of synaesthesia to upstage the gravitas that might be assumed by the indexical soundtrack.

Collaborative feedback

Animation is essentially a laborious and solitary process of working frame by frame. This ten and a half minute film was made up of 15,625 frames, most of them consisting of layers of many different images. Given the constraints of this medium the process had to be accessible and clear to the geographically scattered participants. Whenever a milestone was reached in the animation process (making a mock-up of the digital image, animating a section and so on) they would be sent a DVD of the image and sound together so that they could feedback on how it 'correct' it was. There was also a blog about the production which the film participants were made administrators of. These channels of communication allowed them to comment on work in progress and make specific the changes that they felt were necessary, for example;

"The beginning is fine, but really it would be better just to have a thick white cloud moving continuously from left to right with the little silvery things as they are. It is the flower-like images which are wrong. What is the final sound of silver? It looks like a very thin vertical pole. Black balls are not there in the music at all!"\(^{82}\)

If the animation was going to claim to be able to translate unique perceptual processing into external images then there had to be a robust system of feedback. Thus at every stage of the film's production; static images, moving animation, composited animation and final film, the participants were given an opportunity to change or improving the 'correctness' of the images made. The animated approximation of the synaesthetic image was not used if it could not be verified by the person whose experience it was purporting to represent. One of the tests for having synaesthesia is one of consistency; in non-audio visual synaesthetes the occurrence of colour/sound association (based on memory alone) is as low as 17% after two weeks, whilst for a synaesthetic person it is almost perfect (Ward, 2008:27).

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\(^{82}\) Roxburgh, J. *An Eyeful of Sound* [e-mail] Personal communication, June 2009.
Authenticating the material

Evidencing the veracity of the material was key to the film’s integrity. In order to claim any substance for the authenticity of the images we had to endeavour to make the animated depiction of the synaesthetic reaction as close as possible to the original experience, triangulating this information through interview, colour charts and drawings. Ultimately the representation is just that; not an exact replica of the experience but an approximation given the limitations of the medium and the humans using it.
There were several practical problems encountered when collecting and verifying material for this project. In the role of facilitator of their subjective interior experience the ideas and opinions about the clips of the film maker had to be completely sublimated, repressing any desires to alter or re-interpret the imagery being described. An example of this was Tessa’s reaction to the sound of a balloon deflating, which she saw as a huge metallic silver sperm shape. Her reaction to the sound of a loon call was what looked like a set of midnight blue ovaries. Those images would not have been chosen for the film since they have a very different resonance for most of the rest of us, but they had to be retained as the ‘truth’ of what she saw. The film maker was on one side of the boundary between imagining and seeing and she was on the other.

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83 Several non-synaesthetic audience members have asked me after screenings why there are ovaries in the film…
Working iterative-inductively

As the project progressed the feedback from the synaesthetic interviewees was that they found it easier to react to sound when it was part of a more complex piece of music, rather than individual sounds. This was entirely unanticipated and an example of the way in which the dialogic process had to be changed as a result. This preference was only made clear when we went back to play them the rough cut of the film with sound and image together and made it trickier to review which bit of visual information went with which sound. Related to this the layering of sounds on top of each other could produce a different reaction to the sound individually, so I often found myself sitting in front of a computer screen trying to translate what looked like a Kandinsky painting into individual animated clips (see figure 9).

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Ward (2008:28) talks about how MRI scanning evidences the way that synaesthetic brains have activity in the V4 (visual processing) area of the brain when listening to sound/music but the complexity of the sound/music is not something that I have found any studies into.
Reclaiming an element of the authorial role

Working with the sound designer and composer we layered different synaesthetes' sound/visuals together during the sound track, making artistic decisions about what worked better or what would be more visually interesting (connecting sound and synaesthetic image). For example there may have been a sound which there was more than one visual reaction for, in which case the reaction was chosen that was more visually stimulating, interesting to look at or that fitted in best with the flow of the film. This authorial overview was the point where the shared collaborative process was stymied, although it is a tricky ethical point as Shira Avni concurs (2011: 87) where the director decides where and what to edit (and with what outcome in view). Ultimately the film did have a director and that role afforded the opportunity to have the final word on (and ultimate power over) the material via the sound and image editing, however we tried to make this as transparent a process to the collaborators as possible by sending them copies of the final edited version for approval. This was a different role to the one played in the PhD study; in this
synaesthesia project the director took an authorial role in creating a 'documentary', but in the later PhD studies the role was one of facilitator creating 'documents'\textsuperscript{85}.

Responses to the work

The synaesthetic subjects of the film found the external visualising of their internal idiosyncratic synaesthetic reactions exciting. Two of them reported using the DVDs of their animated reactions (not the final film but the animated working documents of their personal reactions) as explanatory tools for their partners, families and friends.\textsuperscript{86} When they saw the final film screened in a cinema\textsuperscript{87} they spent some time picking out 'their' reactions on screen. Even though there was a selection of different people's synaesthesia being represented Emma said that the film was 'made very synaesthetically' and Tessa reported that her husband now really understood what synaesthesia was after seeing the film. Since making the film and presenting it at festivals and conferences here have been many scientists who have said that they use the film whilst teaching to explain what synaesthesia feels like.\textsuperscript{88} Scientists can explain how they think the brain works by mapping the cortex or understanding synaptic connection 'but they cannot convey how experience feels the way it does to us as individuals' (Ede, 2005: 3-4), and evocation of subjective perception is what the film aimed to convey.

Evaluation of the process

This film was made using methods which were governed by their aim to make a film that conveyed 'the intensely subjective and immersive experience of audiovisual synaesthesia'.

The interviewees had such a clear vision of their synaesthetic reactions that the animation

\textsuperscript{85} The 'documents' created could be turned into a 'documentary' at a later stage, thus changing the facilitator role into a directorial one, but the point of this study is to show that animated documents are able to adequately evidence brain states when made using this methodology.

\textsuperscript{86} See <http://vimeo.com/20011009> [accessed 21st November 2013] for an example of this.

\textsuperscript{87} The film premiered at the London Short Film Festival 2010

\textsuperscript{88} For example Dr Lawrence Marks at Yale University has told me that he uses the film in his psychology class to give students an insight into the way synaesthesia works. The synaesthesia research group at the University of Sussex <http://www.sussex.ac.uk/synaesthesia/> [accessed 21st November 2013] uses still of the film on its website and links to the film <http://www.sussex.ac.uk/synaesthesia/links> [accessed 21st November 2013] as an example of the brain state.
was mainly called upon to reproduce iconically, with occasional symbolic references like the 'coloured quilt'.

Upon reflection there were methods used, some devised *ad hoc* for the purpose as the project evolved, which required greater investigation and thought in order that they could be used again to make more work in the area of unusual perceptual processing, in other words developed into a methodology. This project served as a 'pilot study' for the subsequent work. The next two case studies launch from this juncture, and were chosen in order to test the theory that a methodology for using animation to document internal brain states might be developed.
Phantom Limb syndrome

Introduction

As mentioned earlier, both of the perceptual states chosen were apparently and deliberately not primarily visual in their manifestation. Phantom limb syndrome is not a visual experience, so initially the visual form of animation is not the ideal form to represent the perception of this perceptual state. Kinaesthesia is an under-acknowledged sense (it is not one of the generally acknowledged five senses, for example) and one that would be very challenging to represent visually. This section will discuss issues about developing the practice methodology which relate specifically to this perceptual brain state and part of the project.

Initial research

In doing the initial research the most immediate impression of the research done here was the medicalisation of the area in comparison with synaesthesia. Because synaesthesia is benign and not generally considered to be debilitating the interest in it is studied as an interestingly quirky neurological anomaly; an outlier on the continuum of normal healthy brains (see Ramachandran, Ward et al). Phantom limb syndrome is working with people who have had intense physical and potentially mental trauma, so researching the way in which their brains adjust to phantom sensory information is understandably not the first concern of the medical professionals in this area.

Through Dr Jamie Ward the contact was made with a PhD student at the University of East Sussex, (now Dr) Viva Goller. This connection quickly solved the problem of contacting interviewees and creating a consulting scientist with whom to discuss the subject area. The contact with the consulting scientist here was limited by time constraints to two interviews, but Dr Goller was able to recommend particular participants of her own study as being articulate, happy to talk or with interesting stories to tell. The benefit of involving these people in the project was that they had experienced the actual loss a long time ago (between 18-20 years so they were not involved in physical or psychological rehabilitation) and that they were already

89 Much of the research around limb loss is practical ways to cope with the physical trauma and finding ways to cope with the associated phantom pain, e.g. support networks like <http://limblossinformationcentre.com/> [accessed 14th October 2012]
encultured in the research process; they were used to being asked possibly impertinent questions by a research student. Dr Goller's role was, ethnographically speaking, a gatekeeper rather than a collaborator (O'Reilly, 2009: 132). Because the interviewees had previously had contact with Dr Goller's doctoral study, amongst others, they were happy to accept an invitation to be involved with the project. Simultaneously I began researching more broadly in the subject area and looked at art or film about the subject. There was not much material available dealing with phantom limb in anything other than straight documentary\(^9\) (usually televiual) sense. However, the Wellcome Collection contains the work of Alexa Wright, a photographer who worked with digital manipulation to visualise the internal sensations of those with phantom limb syndrome. Wright used digital methods to re-present photographically the way in which subjects really experience their phantom limb.

\[^9\] For example see at 9'30 <http://www.ted.com/talks/view/lang/en//id/184> [accessed 19th January 2011]
(25) Alexa Wright, photographs from After Image, The Wellcome Collection, 1997\(^{91}\)

Wright’s work is very interesting as it makes a static subjective visualisation of the phantom limb experience. At first the images of men and women appear to be portraits of people with congenital disabilities but as one looks closer (and in conjunction with the accompanying text) it becomes clear that these are photographically manipulated images. These were a reference point to use for the research although the photographic aesthetic of the images ran counter to some of the texts with the work. Ultimately the images appear to draw on the surrealist tradition visually but remain unconvincing as representations of an internally experienced reality, partially because of their use of a manipulated photographic medium. The photos of JN (the woman) are reminiscent of Diane Arbus photographs of people with congenital disabilities and the images of RD (the man) seem to reference René Magritte and surrealism. The work is presented with an accompanying text which comes from an interview done with the subjects, but like the photos themselves the interviews are apparently records of a single encounter with the subjects’ words presented as a statement rather than a dialogic encounter, so the methodology used was very different from the one employed in this PhD study. Here the photographer is an artist, using the subject of phantom limb syndrome, not a facilitator using photography to document this brain state. The outcome is a work of art then, not a document.

Differences from the original paradigm

The similarities of the experience between the phantom limb collaborative consultants was a surprise after the wildly varying idiopathic experience of synaesthetic interviewees. Some of the data from Dr Goller’s pertaining to this similarity of experience, for example the fact that many amputees have ‘missing’ sense sections of their legs (commonly the shin area or the mid thigh where there were fewer nerve endings, as illustrated in Wright’s photographs) could be integrated into the list of initial questions, which were rewritten and included in the material sent out to the potential collaborators before the interview (see appendix for the full list of questions, and all the e-mail dialogue), for example ‘Where does [the phantom limb] start and where does it end?’ (since the phantom limbs were not always exactly the same size as the original limb), ‘Do you visualise your phantom limb?’ (which yielded surprising answers about metallic points, bubbles and burrowing creatures) and

92 Other information restating examples cited by V.S. Ramachandran (like the amputees born without a limb who then experience phantom sensation as a ‘normal’ full sized or even outsized limb) was fascinating to hear reiterated using different case studies (2005: 41).
'Are there missing sections (e.g. shin) that you cannot feel?' which were directly influenced by the discussion with Dr Goller.

Setting up the methodology

The first connection with the group was an e-mail introducing the project to the volunteers who had responded to Viva’s initial e-mail request. All of the potential collaborative consultants had participated in research before but it needed to be clear that this research was not scientific and would be collaborative; requiring dialogic participation. When they were eventually interviewed it became clear that they had not been asked this type of question before. The questions posed were entirely to do with internal sensations, visualisation and perception rather than behaviour and adaptation. For example they were asked to visualise and describe their absent limb sensations, and asked if the sensations they feel in their phantom limb feel familiar, after discussion with Dr Goller and her explanation that the phantom sensations were often different from ones one might feel in a present, healthy limb. Although they had all taken part in research before the depth of the questioning was very different from what they may have been used to (I witnessed some research students at the University of East London doing tests on prosopagnosic subjects, for example, and the questions they were asked were very precise computer based tests with no space for comment). The semi-structured questionnaires devised for this study relied on the collaborative consultants and facilitator developing a rapport (O'Reilly, 2009: 129, talks about 'rapport' being like developing a conversation with the subject) which would allow a free exchange of information and transparency in the process.

The visualisation process

One of the fundamental things which became evident as the interview process progressed was that kinaesthetic sensations are not primarily visual and so are hard to describe in

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93 Including a participant information sheet, see appendices, which gave them information on the duration of the original meeting, the kind of questions likely to be asked, how to contact me and my supervisors, confidentiality and how to complain if they were unhappy with any aspect of the study.

94 For example; do you visualise your phantom limb? can you describe your phantom limb? and (during discussion about sensations) what colour are the nerve endings?
visual terms, especially if it is unfamiliar territory. The interviews themselves had lots of useful material (for example Pete had lots of fascinating stories about incidents where his phantom limb had affected his life, and Stephen was very articulate about the ways in which his phantom limb had been assimilated into his sense of himself and his body) but extrapolating something tangibly visual out of it was a different matter entirely. The process had a different starting point for each collaborative consultant and critically the visual element of their experience emerged in different ways and at different times. Stephen spoke using very metaphorical language, Pete had lots of practical examples of how his phantom limb had affected his life and Dave tried hard to express in iconic language what the sensations tangibly felt like to him. Because the three collaborative consultants were so different in engagement with the project the work split into three distinct areas; Dave's huge foot scenario, Stephen's fizzy bubbles running along the nerve pathways of his phantom foot and Pete's anecdote about having no leg in bed and forgetting its absence.

Pete's forgotten leg

(26) Still from animated document of Pete's night time anecdote

95 None of the collaborative consultants had visual occupations; they worked in engineering, lorry driving and aqua-horticulture.

96 He described his relationship with his prosthesis as being like a driver's with their car; if you drive over a bump in the road your experience of the bump is as if the car is an extension of your own body, you don't perceive the car and your body as separate entities in that split second of experiencing 'the bump' and that is how it is with his prosthetic limb.
Pete's experience was the first thing animated for this project, based on his vivid descriptions of waking in the night to the sound of his baby daughter crying, and leaping out of bed to comfort her, forgetting that he had no leg (he does not wear a prosthetic in bed). This sequence was visually based on Henry Moore's drawings of sleepers in the London Underground stations during WWII, and I tried to incorporate Pete's perception of getting a cold foot when his phantom was 'out' of the covers. On reflection however the work seemed like an example of an 'animated interview'; a 'word-specific combination' (McCloud, 1991: 153) which despite not using sound was entirely reliant on a spoken anecdote.

'The most vivid sensation of a phantom limb that I get is when my daughter was young and when she used to wake up crying as a baby and I used to step out of the bed onto my leg and it would touch the floor, I'd step forward on it, put the other leg down and you'd wake up very suddenly - you silly git, you've only got one leg!' (from interview with Pete, 14th July 2011).

The sequence was too literal and illustrative to make use of the collaborative methodology. It was not representing the internal experience and so this section was shelved as a possible pathway forwards, and was not explored further as Pete was not able to be consistent in his correspondence and so there was no feedback to work from to try and better express his experiences.
Dave's huge foot

(27) Sketch of Dave's enlarging foot experience.

(28) Still from animated document of Dave’s foot, still not big enough
Dave discovered the ability to make his phantom foot enlarge until it encompassed him during his initial interview; he had had no experience of this before and it was an example of asking a visual/perceptual rather than scientific question. We were discussing the theory about why the phantom limb occurs and the difference in information being sent to the brain when the site of the amputation is touched, versus when it is not stimulated, and he volunteered to take off his prosthesis and try it out to tell me how it felt (interview with Dave, 15th July 2011). The questioning, couched in the semi-structured style using 'conversational' rapport (O'Reilly, 2009: 129) rather than the structured interview data collection style, allowed for experimentation and expansion of the theme (of documenting and representing visually the noetic experience) within the sphere of the discussion. The sequence seemed quite straightforward but we had to go back and forth several times to get the size of the eventual foot correct.

'The one thing I might say is that the expanded phantom foot could actually grow so as to encompass me entirely, also the foot appears to me more as an array of point sources' (Dave, e-mail, 22nd November 2011)
'the final foot size could be doubled I think as I am fully enclosed and centred within the image' (Dave, e-mail, 23rd January 2012)

The points, which represented his nerve endings, also required some tinkering since the nerve endings themselves were actively pulsing and metallic, a clarification which was not mentioned in the interview but came up in e-mail discussion over time. Because the perception of having phantom limb is relatively universally experienced (unlike synaesthesia or prosopagnosia for example) with similar symptoms reported, when the collaborative consultants were able to see the animated documents of the other participants' experiences there were considerable overlaps, including supporting material for the 'pulsing metallic nerve ending' experiences. For example Stephen said the 'description of metallic dots is a very good one, and yes I get exactly that' (via e-mail, 21st March, 2012). Stephen's own descriptions were more symbolic or metaphorical (he likened the pulsing dots to bubbles or little creatures, ibid) but this does not undermine the authenticity of his reported experience, however it does show that the full range of symbol, icon and index should be used in documenting such nuanced experiences.

'Another aspect to consider and good for animation is - the points or stars of the sensation are pulsing or modulating in their intensity and although I attribute no actual colour to them they appear as a metallic silver! If you have any dental fillings of the amalgam type then biting on silver paper causes a certain reaction, it gives me a similar 'metallic silver' taste sensation as the stars of the foot give a 'metallic silver' colour.' (Dave, e-mail, 28th November 2011)

Dave's responses were clearly aware of the imaginative interpretation required to visualise them, and some of the data he gave me was inviting a creative response; 'I think the points could be pulsing slightly more and more metallic for sure, I'm not sure if sparkly is right - maybe shimmering, see what you can conjour.' (Dave, e-mail, 20th March 2012)

This collaboratively achieved sequence was a much more successful example of using animation to document an internal experience. The collaborative dialogue worked very well and Dave's curiosity in wanting to see what would be animated from our discussion was an important driver for the clip. We were both aware that the translation of this experience from kinaesthetic to visual was just that, a translation, not the original, since kinaesthetically
experienced sensations are not visual. As Benjamin pointed out, it stands to reason 'that kinship does not necessarily involve likeness' (1955: 74) but getting as good a translation as possible in moving visual language became a shared goal.

Stephen's fizzy bubbles

Stephen's account of the fizzy feet came out of my conversations with Dave about the pulsing metallic points of light. Stephen had been very helpful and provided lots of information but it was difficult to translate into a visually tangible sequence (for example the car metaphor was helpful conceptually but not visually). Eventually Stephen was sent (along with all the other collaborators) all the sequences we had done to date, to see if they triggered any recognition, or inspired him to be similarly visual about his own experiences. Stephen understood the reference to metallic points immediately and elaborated on it too, describing additional feelings he had in a curious way. Before the clips out were sent out I was anxious that the existing visuals would prompt the other collaborative consultants too literally but the response that Stephen was (in his words) one of recognition rather than direction from other collaborators on the project.
'The description of metallic dots is a very good one, and yes I get exactly that. In addition the dots sometimes move like having bubbles under the skin, or even the idea that there are little creatures wriggling about inside. This is probably the pulsing he refers to, as that is a good alternative way to describe them. I certainly get pins and needles too, along with jabs that actually hurt. The dots and bubble, pins and needles don't hurt, they are just sensations.' (Stephen, e-mail, 21st March 2012)

Initially the bubbles were animated moving freely under the skin and in the shape of a foot but Stephen’s experience was that they conformed much more closely to 'pathways' like veins, running through the foot.

'The bubbles I experience are trapped in channels like veins and course under the skin, while the ones in your film are free in a kind of open atmosphere. The fizzing I experience is a little bit more like a mild electric shock than a Gin and Tonic! I don’t know if this is helpful for you or if it fits with your other case study’s experiences. There is one other thing that I notice, and that is there appear to be areas that the bubbles never go. Where they do go, because they feel like they are being forced through veins or channels, they travel at different speeds, sometimes getting trapped, or forced through narrow confines, altering their rate of progress, and therefore not feeling free or floating like those in the film. They also travel in a wide variety of directions, and sometimes are stationary, such that they are concentrated in an area where they are being generated, but not moving away. This is a version of electric tingling perhaps, but it does sometimes still feel like bubbles being formed and popped without going anywhere far.' (Stephen, e-mail, 19th April 2012)

The reference to gin and tonic was one of the clips where a fizzy sound effect was added to the bubbles under the skin in an attempt to make the animation more evocative. Representing one sensory experience using a different sense (touch sensations replaced by visuals) the idea was that by layering in more senses (sound) it might help evoke it more correctly, which it did not do. The subsequent attempts used an anatomical drawing of a foot to trace where the bubbles would be likely to go, which seemed to fit in with Stephen’s idea much better although the pacing was all wrong.
‘...the final sequence based on the bubbles moving along channels or veins could be slowed down considerably. They don’t feel as though they are rushing quite as fast as that. That said, the imagery works well.’ (Stephen, e-mail, 9th March 2013)

When it came to animating the 'little creatures' Stephen explained that the bubbles and creatures were not separate experiences but different evocations or descriptions of the same sensations.

Evaluation of the process

The process of making these documents was not continuous, and the information flow was different for all of the collaborative consultants. The experience of working with people with synaesthesia had not prepared me for working with non-visual outcomes and the straightforward assumption that there would be a bundle of salient data during the initial interview, which would be refined by the collaborative cycle, was not correct. Much of the important information came through the dialogic process itself, for example Dave's unexpected nugget that he experienced the nerve tingling like pulsating metallic points did not come up until four months after the initial interview and lots of discussion (the entire process of making that sequence collaboratively spanned July 2011 - March 2012). This then triggered a visual response from Stephen, the e-mail from March 2012, when he endorsed Dave's experiences and suggested his own interpretation of the experience. These did not contradict Dave's description but used more symbolic language to do so. The cross-fertilisation of ideas here worked very well, because of the similarity of their perceptual experiences Stephen was able to substantiate Dave's contextualising of the phantom limb experience. Again, this was very different from the synaesthesia experience where each of the interviewees had different and specific individual experiences.

The use of iconic imagery in Pete's missing leg was the least successful of the three documents, since it reproduced an illustration of the external view of his experience, although the iconic used in Dave's huge foot was much more successful since it represented the internal. The symbolic (bubbles) also worked well in describing Stephen's perceptual fizzy food sensations. Here 'success' is measured by the corroborating response of the collaborative consultants, whose experience is being documented and who is collaboratively creating the translation of perception from kinaesthetic into visual.
The use of sound in animated documents

Finally the use of sound was cause for some confusion after the sound effect on the fizzy foot sequence was used to try to better evoke the experience. After sending Stephen's clip to Dave for feedback he said 'fizzing and bubbling are very apt descriptions of the type of sensations I experience, although I have much less audio disturbance' (Dave, e-mail, 22 April 2012). The idea that the document communicated literal audio disturbance or hallucinations was extremely perturbing and gave pause for thought. It highlighted the importance of the sequences in documenting the experience rather than communicating it - which I (belatedly) realised had been the intention when adding sound. Sobchak describes how cinema 'simultaneously represents experience through dynamic presentation … and it also presents experience as representation' (2004: 74). In this case I had forgotten to just present Stephen's experience as described but had attempted to represent it, to mediate it through a film maker's lens, and confused the process. After this experience it became clear that the use of sound when documenting (rather than evoking) their experiences was not necessary unless they specifically requested it, since their experience was already being translated from one form (their internal kinaesthetic perception) to another (the screen). By adding the third layer (of sound) it attached a set of references which was confusing matters. In the development of the thesis this was an important point. The document actually held more authority as such without the sound ('audio disturbance'), in direct opposition to the animated interview model of animated documentary which needs the external document of an explanatory soundtrack. Because the animated document is fostered and validated by the collaborative consultants, who are also the primary audience for the documents, contextualising material (e.g. aural cues such as sound effects, voice over or interview material) is axiomatic. The 'animated interview' is a documentary style rather than a document, and so this issue is one I shall return to in chapter six (reflection on the evolution of the methodology).
Prospagnosia

Introduction

Rita Carter describes how, when someone is face blind 'a person's face makes no more impression on them than, say, their kneecap. Just as knees - give or take an extra nobble - look alike to normal people, so faces all look alike' (2010: 197).

To most people faces have a privileged status, a 'face, to us, is a person looking out - we see, as it were, the person through his persona, his face. But for [this patient] there was no persona in this sense - no outward persona and no person within' (Sacks, 1985: 12). As an animation director interested in documentary work this was an enormous challenge, to try and interpret the lack of visual comprehension of such an elemental part of human interaction. Most of us see faces pareidolically; we are hard wired to spot them in pancake batter, plug sockets or Rorschach ink blots. By choosing this subject for visualisation the animation would have to trick a non-prosopagnosic viewer into unlearning one of the basic human impulses, that of recognising the most tenuous pattern as a human face.

(31) Still from animated document of prosopagnosia experience, 2013

97 Sacks was talking about a patient, the man who mistook his wife for a hat, but he himself is also congenitally prosopagnosic).
Initial research

The research undertaken in this subject area was initially reading texts on the topic, some of which are classics in the field of popular neuro-psychology like *The Man Who Mistook his Wife for a Hat* (Sacks, 1985) and *Phantoms in the Brain* (Ramachandran, 1995, 2005). The research field of prosopagnosia is a developing one, with notable research hubs at Bournemouth University, UK, led by Dr Sarah Bate⁹⁸, who has written a key text on the subject, and Dartmouth College, US, lead by Brad Duchaine, who has developed several online facial recognition tests.⁹⁹ Some of the key issues in the area are the prevalence of congenital versus developmental prosopagnosia (Duchaine, 2006, Bate, 2013: 60), the prevalence of super recognisers (the opposite of prosopagnosia, i.e. those who cannot forget a face, Jansari, 2013), comparative study between early and late acquired and congenital prosopagnosia, and rehabilitative training procedures (all from papers presented at University of East London mini-conference in prosopagnosia, January 2013).

There was little or no art work specifically about this subject although the work of North American painter Chuck Close, who has prosopagnosia, was very interesting to look at. Close, who has congenital prosopagnosia, says that his facial recognition is so limited that he could spend and evening talking to someone face to face but still not be able to recognise them the next day (Radiolab, 2010). He also claims that his prosopagnosia is one of the reasons that he chose to paint faces; as a way of memorising them better,

‘The way I work is to make this kind of Brobdingnagian world which I make the face into a landscape, and I journey across that landscape like Gulliver's Lilliputians, crawling over the face of a giant, not knowing they were on the face of a giant, but knowing everything about that face. And then what I do is I put all that information together: the nose and nostrils, the corners of the mouth and whatever, … and I can commit it to memory’ (ibid).

His biographer Christopher Finch suggests that his face blindness was not the sole reason that Close chose faces for his huge paintings but the predisposition that his prosopagnosia gave him for needing to remember faces led him to have a stronger interest in dealing with the face this way (Finch, 2010: 140). Close’s work has been aligned with the photorealistic

⁹⁸ <http://prosopagnosiaresearch.org/> accessed April 2011
movement of the 1970s but his work pre-dates theirs and according to Finch Close does not feel part of their oeuvre. Finch points out that unlike artists like Robert Cottingham, Richard Estes and Ralph Goings, Close’s work deals with people, and on a huge scale (Finch, 146). Close explained that he has huge respect for the work of the photorealists but felt no affinity with them as a group; 'I felt that what they were doing was quite distinct from what I was doing' (ibid). Confirming Close’s claim that he paints faces in order to commit them to memory (Radiolab, 2010) with only one exception he only paints people that are important to him and integral to his life; his extended family (Finch, 2010: 153)

(32) Lucas I, (1987), Chuck Close. Painting (254cm x 214.6cm). Detail from same.
Chuck Close paints faces on a huge scale, breaking down the face from photos into a grid system where he deals with each grid separately. This visual trope developed originally from his attempt to make an enormous mezzotint (Keith/Mezzotint, 1972) where the grid pattern inherent in the process of making several prints to create a whole became apparent, and which he subsequently exploited further in some of his later work. From the perspective of my practice this breaking down of the face into grid was interesting since a theory about the way that prosopagnosic people see faces is that they break the face down into its component parts rather than see the 'pattern' of the face as a whole. This breaking down of features stops them recognises the person again, since it is the pattern or order of the features which makes each face unique.
Aside from the classic popular texts mentioned current research in the area is relatively limited so initial research was made up of whatever clips dealing with the topic were available online\(^{100}\) and tracking down the increasing number of documentary television and radio programmes, and news articles on the topic along with the opposite perceptual state of 'super recognisers' (see Radiolab 2010, Duchaine 2006-10, Bates 2013, Jansari, 2013 & Prospagnosia conference 2013).

Dr Ashok Jansari, from University of East London, was my primary subject specialist consultant for prosopagnosia. He is at the cutting edge of his field and has a strong understanding of how cross-disciplinary collaboration can be mutually beneficial. He has a small cluster of graduate students working in his face recognition research team\(^{101}\) which was helpful in allowing access to interviewees and using as a sounding board for ideas and presentation of information. The initial contact with him was a meeting where prospective research was presented, the scope of the project explained and he was asked to be a consultant on the developing study.

Having read more around the subject area (Ramachandran (1999, 2005), Duchaine (2006, 2009, 2010), Sacks (1985), Bate et al (2009), Radiolab (2010)) and having been given pointers for areas to look at by Ashok the research centred now on finding potential interviewees who would be available and willing to take part in the collaborative process, representing both congenital and developmental prosopagnosia. It was clear by this stage that manifestations of prosopagnosia would be extremely tricky to turn into a visual form, not least because there are so many different types of the trait. Until recently it was thought to be very rare, although now developmental face blindness is thought to affect one person in fifty; a German study reported a rate of developmental prosopagnosia at 2.47% of the overall population (Kennerknecht et al, 2006). Acquired prosopagnosia is more rare since it develops through traumatic brain injuries to the part of the brain that affects facial recognition (through stroke, brain tumour, encephalitis and so on) but the effects tend to be more severe and comprehensive.

\(^{100}\) Such as this one; <http://www.youtube.com/watch?v=vwCrxomPbtY> accessed 29th May 2011 and the fascinating edition of Radiolab; Krulwich, R., 2010.

\(^{101}\) <http://www.uel.ac.uk/psychology/research/face-recognition/> accessed 12th November 2012
Through the initial contact with Dr Jansari he was able to pass on the details of two subjects with severe acquired prosopagnosia who were willing to take part in interviews. From working with people with synaesthesia my experience was that many more people have 'hidden' perceptual states than most people suspect. Duchaine and Nakaya document the realisation that whilst acquired prosopagnosia is rare and extreme, the number of developmental (congenital) prosopagnosics has been grossly underestimated (2006: 166). Through a callout to my own circle of friends I found an ex-colleague who has congenital prosopagnosia and who was willing to take part in the project.

Unlike phantom limb syndrome where there had been direct parallels with the sensory-based trait of synaesthesia, with prosopagnosia the manifestation was very different. Because it is the lack of an instinctive trait (that many people are not even aware they have) it is a hard thing to explain and a hard thing to grasp. Those who have the more severe acquired prosopagnosia spoke of their painful awareness of their loss in a way the phantom limb collaborative consultants did not articulate. If you lose a limb you can have a new one fashioned and publicly seem very little different from anyone else. If your lack of limb is noticeable then you may be treated with pity or sympathy but if you are missing your ability to recognise any faces at all then socially it can be very debilitating in a totally different way.

Setting up the methodology

Because prosopagnosia is a lack of perception it was very hard to know where to start. When prosopagnosics see faces they often have exactly the same visual perception as people without prosopagnosia, but they cannot retain or recall the information to be able to recognise that face again. David, Claire and Andy were all extremely articulate and thoughtful about their perceptual states, but the interviews with them made it clear that they all experience this state quite differently.

The initial strategy for investigating their approach to faces was to treat the face in different ways, using Dr Jansari's face (34) as a starting point (one they had all been exposed to many times).

\[102\] Of course it could be argued that we all have hidden cognitive states since no one knows what is happening in anyone else's head. From having my eyes tested at an Optician's I know that I can only see monocularly and my perception of red is much stronger than that of green. Who knows if you and I see the same way?
This did not seem to strike any chords with the collaborative consultants, understandably (in hindsight) since their lack of visual perception made it unclear to them what they did not see. Although none of the collaborative consultants had any other perceptual problems (such as dyslexia, memory or visual problems) their prosopagnosia stemmed from different causes (congenital, developmental caused by encephalitis and developmental caused by a traumatic brain injury) and manifested in subtly different ways. Unlike the experience with synaesthesia there was no strong visual perceptual process associated with the brain state.
and unlike phantom limb syndrome there was no uniformity of experience between the collaborative consultants. This made finding a strategy which would satisfy all the collaborative consultants' impressions of the experience of having prosopagnosia all the harder to undertake. The next approach was based on taking the descriptions that had given of their experiences during the initial interview and representing them visually. From the initial discussions the idea of breaking up the features seemed the most fruitful, using various different methods including print making to represent the fading memory of the facial image, so this was where the sketch book work was concentrated, along with lots of life drawing of faces (see DVD).

The visualisation process

There were three visual approaches to the first three animated clips; the symbolically faceless crowd (35), the characterful face leaching out all characteristics over time (36) and the moving features face (37), where the distances between features cannot be retained.

(35) Still from an animated interpretation of a prosopagnosic experience
In the correspondence to the collaborative consultants they were told;
'It is important to make it clear that you don't have to choose a 'right' one out of these, this is just a starting point for our discussion about the way in which you see faces. This is a process of collaboration with you and any feedback you have will be helpful. You can't be too fussy or too specific! Once the first round of feedback is in I will be able to make
changes, scrap ideas or generate new ones, and this back and forth conversation will happen (slowly) over time, directed and contributed to by you. I anticipate making separate animations for all three of you since your prosopagnosia comes from three different sources, so in the future you will probably get individual communication about the work we're making together. I hope that this will be an interesting, insightful experience for you and it may be helpful in explaining the way you see faces to those around you as well as to a wider audience.' (e-mail to David, Claire and Andy, 30th November 2011).

The hypothesis was that each person would choose a clip which began to touch on the way they saw faces and so we could build a representation from there. However, this was proved totally wrong. They seemed to see some resonance in all of the clips but in different ways and for different but essentially generalised reasons; it was hard to pin down specific elements which made more sense than others. David did not really respond to these e-mail conversations at all, although he did when the work was sent out on DVD, partially because of issues with the technology. This meant that I had less data from him than from Claire and Andrew who both responded via e-mail.

It seemed to make sense at this point to try and dig deeper into what they had reported and make the responses more individually tailored to specific comments. In discussion Andy had said that he recognised faces from a particular angle but when the angle changed the face became unrecognisable again. He and I worked on an animated clip based on this idea, which he ultimately felt was a tolerable representation of his impression (38).
This representation was fine but it did not advance us much further in finding a systematic way to represent prosopagnosia visually. People with prosopagnosia have problems in recognising the patterns of the face; they can see each individual feature normally but then are unable to put them together using ‘configural processing’ (Bate, 2013:14), i.e. putting the features into a recognisable pattern that they can then remember and use to recall the person when they meet them again (something that most of us do without realising).

‘The particular advantage of configural processing is that it takes into account the overall structure of the face, including spatial distances between features. This provides the perceiver with more information than can be gathered from the use of featural information alone, and is thought to facilitate the recognition process’ (Bates, 2013: 15).

Considering the work of Chuck Close whose large scale grid approach to portraiture, breaking down the face into its composite parts to make a whole, seemed to speak to his professed inability to configurally process faces, it seemed that using boxes or grids to break down the face would be a fruitful way forward, so this was the next tactic used (39).
(39) Stills from an animated interpretation of a prosopagnosic experience; the 'box face' sequence

This was more successful in providing a more open format for making work; Andy wrote on 7th June 2012,
‘This is good :) It think it explains really well, with the face being visibly divided into different features. How often were the features changing? I couldn’t really see more than 2 changes, but I think that might be my brain being silly :/’

To support the ‘Chuck Close’ thesis that a person with prosopagnosia processes a face in sections the three collaborative consultants were sent an example of the ‘Thatcher illusion’, a test first done in 1980 by Peter Thompson to show the way that our (‘normal’) brains process facial recognition. As long as the eyes and mouth and in roughly the right places, when we see an upside down face we find it hard to see what is wrong with the face. When the faces are turned the right side up the difference is startlingly clear. To a person with prosopagnosia this difference should be as clear whichever way up the face is, since they process faces not as patterns but as individual features. When they received this version of the test, the reactions of the collaborative consultants was fast.

‘The one on the right is wrong, it took about one second to spot it.’ Andy, e-mail, 7th June 2012

‘The right one the mouth & eyes are upside down’ (David, e-mail, 7th June 2012)

Finally an animated sequence was produced which used the strategies learned through the collaborative consulting process, using squares of faces and putting them into a sequence depicting meeting people at a party (something all the collaborative consultants had said was stressful for them) and trying to evoke in the viewer the same sense of disorientation that the people with prosopagnosia might have.

‘Just watched your DVD & found it interesting to hear people with similar strategies as me were they acquired Prosopagnosia like me or born with it as I often wonder which is worse, not ever being able to recognise or being thrown into it at 56, both are a problem. Found it difficult to follow the face changing as it was a bit to quick for me but my wife found it ok’ (David, e-mail, 13th February 2013).

‘I think that your animations say it all about prosopagnosia, they are all rather creepy, nothing and nobody-at-home which is exactly how it feels. It’s just a face, like somebody’s arm is their arm, their knees are their knees and none of it tells us anything about just who they are. Identity, your work does show just how empty and lost we feel looking at faces and I’m sure it will give others a good appreciation of what you are attempting to show them about it.’ (Claire, e-mail, 17th February 2013)
'I finally got chance to look at the DVD - It's truly great. It was good for me to be able to see and hear other people's experiences, and it made me realize that there are other people out there just as confused as I am. It was actually a relief to know that there's a name for what's 'wrong' with me. There's nothing that I'd like to see changed at all, it's perfect.' (Andy, e-mail, 27th March 2013)

Evaluation of the process

Discussion was vital to creating documents in this area since so much of the perceptual processing is intangible and hard to articulate, let alone express through animation. This was a very delicate area to investigate and the process definitely worked most effectively where there was lots of communication. The imagery was a combination of the iconic and the symbolic, with both being used at different times to try and adequately document this elusive brain state. Despite the difficulties in representation this subject was the most compelling of the two used in this PhD study since there was so much diverse information to consider and the outcome was so unpredictable.
Chapter 6: Analysis and reflection

‘In what way does this representation matter to those it represents?’
Bill Nichols (1994: 65)

Introduction

The three case studies all give examples of the collaborative cycle being used to varying degrees, and there were some specific reflections on the findings within each study. However this chapter will look more broadly at the ways in which this methodology might be relevant to using animation to document the internal. It will evaluate the process and reflect on the outcomes. Finally the prospective evolution of this methodology will be considered.

(40) Still from an animated interpretation of a prosopagnosic experience; the 'cocktail party' sequence
Evaluation of methodology

'we are limited by the tools that we use to gather data, in this case ourselves. The Heisenberg uncertainty principle is powerful but should not be used as an excuse for ontological despair' (Fine, 1999: 535)

All documentary is attempting to represent the 'actual' but is ultimately shaped by a person, with all their 'capacities, interests, values, conjectures, suppositions, and presuppositions, whose memories and, not let, whose talents will come to bear directly or indirectly on what is, finally presented to the world' (Coles 1997: 87). This methodology attempts to represent the actual by inviting the collaborative collaborators to become the co-constructors of the work as well as the material for the work. It tries to minimise the influence of 'a person' by democratising the role of director (facilitator) and becoming the work of 'some people'. This section will evaluate the ways in which the methodology has succeeded (or otherwise) through the process itself and the outcomes created.

The process: challenges

The single most relevant thing to know about this methodology is that it is incredibly time consuming. The process of engaging in meaningful dialogue with a group of collaborators was a more challenging task than first apprehended, mainly because of the diversity of experiences represented. As previously detailed there were issues; with non-engagement with the collaborative process (Pete, Phantom limb), differences in the type of rapport developed between facilitator and collaborative consultant, differences in the style of description that each collaborative consultant gave (for example Stephen's metaphorical descriptions contrasted with Dave's perceptual, iconic ones) and differences in the way that the perceptual states were experienced within each group (kinaesthetic phantom limb syndrome was experienced very similarly within the group of collaborative consultants for example, whilst the people with prosopagnosia all experienced their lack of configural processing with different emphasis). Each collaborator needed to be dealt with sensitively and taking on six was probably an over-estimation of the time I would be able to spend on each. The dialogic flow was tricky to keep going when the animation process is so long people forget they are involved. Momentum can be hard to keep up when the facilitator is
disappearing for long periods of time and coming back with a twenty-second clip (which may not be correct). In retrospect the two projects could have been staggered so that one could be concentrated on and then another, and if possible people closer geographically chosen to allow more face to face interviewing, which was the most fruitful. Because we relied so heavily on e-mail the level of engagement was directly related to the level of computer literacy, and the engagement with the project of the collaborative consultants had a lot of influence over their benefit to the final outcome. The two perceptual states were chosen because of their lack of immediate visual articulation but the fact that visual language might not come easily to some of the collaborative consultants would have been a useful consideration in deciding how to approach the initial interview.

The process: solutions

When explaining one’s own internal perspective one never think to describe what one considers obvious, so persistent and directed questioning is needed to be able to go beneath the superficial explanations of what a particular perpetual state feels like and begin to visually analyse it. This was often the case with the synaesthesia interviewees, who would say, ‘well, obviously it is like that’ almost as an aside, when that outcome would not actually be obvious at all. In the phantom limb documents neither of the descriptions of pulsing metallic points or moving bubbles fizzing under the skin were quite like the classic ‘pins and needles’ explanation that routinely gets deployed to describe phantom limb experience in medical literature (when discussing phantom limb sensation the emphasis in medical literature tends to be on the pain experienced by the patients and its relief or management, rather than investigation of the perceptual experience itself). The extended dialogic process of discussion and corroboration was ultimately more fruitful and enriched than if we had just had the initial interview and based the documents on those alone.

The outcomes

Benjamin says that the translation can only ever be an ‘echo of the original’ (1955: 77) and the intention of the translation is a totally different thing from the original itself. Whilst accepting that this is true as the facilitator of the project the intention is to get it as close as possible to the collaborative consultant’s experience. An issue about the outcome was that the conclusion of the document was not obvious to me, since it did not evoke my
perceptual state. How to gauge the conclusion of the document (and when I should stop) was therefore dependent on the collaborator's input.

Coles argues that documentary is as much an art as it is a (social) science (1997: 31) and inevitably the document is filtered through the facilitator's artistic style, medium, even palette if colour is not specified. Martin Kemp talks about the seepage of 'border information' (2006: 275) in medical imagery which gives the viewer extra information about who is making the image. He discusses medical illustrators trying to get rid of the artists hand and work in a 'non-style' (2006: 277), yet he notes that this is impossible since so-called 'objective' styles of representation are easily dateable (2006: 314). In this study the artist's hand is a relevant part of the outcome since it acknowledges the facilitator's inescapable presence in the process whilst still claiming to authentically document within transparent limits. The function of translating from one form (the perceptual experience) into another (animated moving image) is not just to convey information. The 'unfathomable' element of the poetic, Benjamin suggests, can only be reproduced if the translator is also an artist (1955: 70). 'It stands to reason that kinship does not necessarily involve likeness' (1955: 74) but the spirit of the originator's intention should be clear (1955: 79). By translating the collaborative consultant's perceptual experiences into animated documents in this project there is no attempt to hide the artist/facilitator's style. There is no value in creating an impersonal image which denies the collaborative rapport intrinsic in bringing a subjective, noetic experience to the screen. By using paint, print or charcoal to animate the fabrication of the document is undeniable and the collaborative process is transparently available to the viewer. The animated document is itself an indexical record of the conversation that has taken place and remains a representation of our very subjectivity.
Reflection on the evolution of the methodology

Analysis of the findings

In this study the focus is on the creation of the 'animated document', so the intent is to create a document which reflects the experience of the collaborative consultant back to them, using animated moving image. As stated at the start, the attempt of this study is not therefore to make an animated film, or a documentary work per se, but to create an 'authenticated' document that the collaborative consultant accepts as an acceptable visual mirroring of their experience. By the self selected criterion of success, therefore, the findings of this study are that animation can be used to make authenticated documents of perceptual brain states.

'This is good :) It think it explains really well' (Andy 7th June 2012), 'I think that your animations say it all about prosopagnosia…your work does show just how empty and lost we feel looking at faces' (Claire 17th February 2013), 'My portion of the animation was very accurate, I feel you relayed my experience with your interpretation very well' (Dave 2nd March 2013). However, there are caveats for this generally positive set of findings as we look at differences between the two subjects chosen.

It became clear when working on the imagery that translating the phantom limb sensations into animation was much less reliant on verbal explanation of their manifestation than the prosopagnosia; it was easier to show visually. Phantom limb syndrome is a entirely sense based state, where the kinaesthetic feeling of a limb in space is retained despite the limb being gone, but having a limb is something we are all familiar with and the limb itself (although often quite different to the original limb in size, shape or sensations) is relatively straightforward to depict. Prosopagnosia relates to an instinctive recognition and information retention which only makes sense in a cultural or social setting, and therefore is much less easy to make a straightforward visual depiction of. Furthermore, although most people do recognise familiar faces without problems we are not aware that doing so requires any special ability since our capacity to do so is unconsciously manifested. The impression of having phantom limb syndrome can be depicted using animation and no indexical sound, as in the documents made for this study, without a complete loss of understanding of the impact or sensations. The prosopagnosia documents, whilst perfectly readable to the collaborative consultants who worked on them, need more
contextualisation in order to be as clear to an external audience, signalling a potential future disconnect between document and documentary. Whilst the descriptive use of sound (when I put a fizzy sound effect over the top of Stephen’s fizzy foot, baffling the collaborative consultants as to where the audio ‘hallucinations’ had come from) was not vital in order to document the ‘raw’ experience, a contextualising sound track giving more information about the experience documented would be needed in order to convey an evocation of the experience to an audience of people who have never experienced phantom limb syndrome. The issue of indexical sound is not vital to my argument about the power of animation to document, but it is of interest when attempting to rebalance the semiotic trichotomy. The choice between using original but partially inaudible sound or authentic but re-voiced sound will not be aided by an argument about which is more genuine - they both carry the indexical trace of the words - it may be aided by a discussion about which will convey the material better.

Potential evolution of the methodology
Lassiter acknowledges that the ethnographer - even when working collaboratively - still wields an enormous amount of power and influence over the process, and that completely collaborative work can never be entirely achieved (2005: 145-6). Despite this, the methodology outlined here still represents for my practice a rich and satisfying process within which to bring a strongly collaborative element into my work. We have seen how animators have used some of the elements which make up this ‘adapted methodology’ of collaborative ethnography. There is scope for developing a participatory practice, which I did not attempt here. Within my own practice I would like to develop this methodology further, using it in a directed and specific way taking into account some of the issues discussed in the first part of this chapter. With very complex perceptual brain states, such as prosopagnosia or Charles Bonnet syndrome, documenting through animation offers a sensitive, thoughtful and rich opportunity to see the unseen and, more importantly for the collaborative consultants, to understand what is hidden.
Conclusion

'I have never got anywhere near to the bottom of anything I have ever written about…'
- Clifford Geertz (The Interpretation of Cultures, 1973)

The boundary between imagining and seeing is one of the most indefinable distinctions to make in the study of the brain (Ramachandran, 2011: 86), and yet the conceptual and the perceptual, the telling and the showing, the imagining and the seeing are all areas that non-fiction animation can simultaneously inhabit. Deliberately and explicitly dealing with these dualities develops the scope and ambition of what the form is able to do. An Eyeful of Sound may be perceived as ‘realistic’ to the subjects of the film but abstracted and dreamlike to a non-synaesthetic audience; it is seamlessly a visualisation and an art work. This duality is at the root of animated non-fiction and part of what makes this genre such an interesting one to me as a facilitator, researcher and film maker.

Creating something new

This study systematically uses an overtly collaborative methodology. The aim, as Lassiter describes it, is to move from ‘incidental and conditional collaboration to the building of a more deliberate and explicit’ collaborative practice (2005: 16). Lassiter's summarised definition of collaborative ethnography is;


The work produced in this study takes this definition and uses it as the basis of an expanded definition of the collaborative cycle methodology, as used in creating animated documents. It has an explicit set of aims; it uses a stated systematic transparent methodology to approach the project agreed and understood by all stakeholders before the project begins, it involves the creation of documents not documentaries as its outcome,
and there is a rationalisation of roles dismantling the accepted hierarchy and giving
directorial power over the documents to the collaborative consultants.
It tests these ideas in practice using complex perceptual brain states, prosopagnosia and
phantom limb syndrome, which have not previously been depicted in animation and
provides evidence of how successful those projects have been using criteria set by the
collaborative consultants.

The methodology provides an explicit and transparent framework of ideas that invite the
collaborative consultant into the process of producing the document and let them direct its
outcome. By using this methodology therefore the ‘authenticating’ process (of the
representation of the perceptual brain state) is an intrinsic part of its creation and
indisvisible from the document itself – and its documentary status.
This thesis makes several distinctions about the nature of the way that animation can
document, it has challenged the ideas about a default model for using animation in the
documentary genre and it has argued that by using animation to document the full range of
the sign should be utilised, not just the index.

The creation of the index through the methodology

Parenthetically this study argues that the aural indexical link should not be seen as animated
documentary’s only claim to documentary status. Through a critique of the self imposed
limitations of the ‘animated interview’ model, and the presentation of a framework of a
collaborative cycle, it discusses how the indexical claim need not be confined to the aural.
From the research done into different perceptual brain states it has become clear that
collaborative consultants use elements of icon, index and symbol non-preferentially, thus
spontaneously diffusing tension around privileging the index.
Rosenkrantz’ argument against animation as a useful tool in documentary is that animation
is primarily iconic, not indexical, and belongs to the painted realm (citing Bazin, 2011).
However this thesis argues that this is not the only way that the form of animation can be
used. As is shown, animation used in the way outlined in this study is able to switch fluently
between iconic and symbolic whilst retaining an indexical link through the methodology. In
the animated document I suggest that the systematic discussion itself (the collaborative
cycle) between facilitator and collaborative consultant is the indexical trace of the referent,
and the images animated by the facilitator are the iconic\textsuperscript{103} or symbolic\textsuperscript{104} depiction of that discussion. The indexical discussion makes the iconic or the symbolic sign in the 'correct' image, as far as the collaborative consultant is concerned, and therefore the animated image is the whole sign of the experience. Indexicality is the trace of existence, and the dialogic exchange between the collaborators is that trace, made manifest in the animated outcome. Joanne Rappaport discusses how, in her collaborative ethnographic work in Columbia, allowing the development of this collaborative space creates 'a crucial venue in which knowledge is created' (2008), and this knowledge becomes manifested in the 'venue' of the animated document. Photographic verifiers are unnecessary to this work since the animation is verified by the collaborative cycle. If the indexical link from sound comes, not from the sound itself but from the fact of the sound has been said; 'merely the fact that it is being said (by what we believe to be the real, living agent that the image iconically represents)' (Rozenkrantz, 2011) then the indexical discussion should serve the same purpose.

Wengraf points out that qualitative interview data only comes from one time and one place (2001:1) and so always needs contextual information, but the visual collaborative animated documents are made incrementally over long periods of time with sustained (although occasional) input from the data source – the collaborative consultant. This makes the animated document the receptacle of much more than a fleeting data dump but a valid and thoughtful documentation that has been discussed, dissected, revised and agreed.

\textsuperscript{103} The animated synaesthetic reactions in An Eyeful of Sound, for example, are iconic representations of what the synaesthetic collaborative consultants see when they hear those sounds.

\textsuperscript{104} Stephen's fizzy bubbles are a symbolic representation of what the sensations he experiences feel like, for example.
Epilogue

The test (aside from the doctoral viva) of this newly formalised methodology will be how it is used in future practice. Whilst doing this PhD study I made a short interpretative film (*Shadow Stories*, 2013) for Shrewsbury Museum and Art Gallery, based on a series of items from their pre-historic gallery. The piece shows the items being used in the context of their times; by definition before recorded history. This led to an interesting dilemma for the animator since any opinion about what a particular item was used for must remain entirely speculative. Swogger (2000) has talked about the ‘tyranny of representation’ in archaeology and as director I was very aware of the way in which visually depicted theory becomes assumed fact. As Simon James says,

‘Archaeologists deal with probabilistic arguments, but they are often expected – especially by the public – to make unequivocal statements of ‘truth’. In a drawing particularly, there is no room for the ‘ifs’, ‘buts’ and ‘maybes’ beloved of scholars’ (2013: 26)

The response to this in an animated representation of the items chosen was to utilise the methodology of the collaborative cycle, with the local council archaeologists taking the role of the collaborative consultants to give feedback which then modified, adjusted and recast animated sections into a representation which allowed space for potential future revision.
Still from Shadow Stories (2013) depicting the possible use of extremely rare Druidic spoons in prophesying the year ahead, possibly using either beer or blood. Since the Druids had an exclusively aural tradition, the use of such spoons is tantalisingly speculative.

I am about to embark on a new project, Loop (2016), working with microbiologists at Imperial College London looking at septin cage assembly in zebrafish. For this project we are explicitly using the collaborative cycle methodology, including drawings by as well as extended discussion and feedback with the scientists, to explain their understanding of the septin cage assembly process at a sub-cellular level. The whole project will use the dialogic exchange of the collaborative cycle to attempt to convey the experience of being a scientist working in this thrilling but little understood area where, as Kemp says, image capturing devices ‘do not serve to simplify or eliminate the subjective issues of seeking, knowing and representing’ (2006: 321). Instead the collaborative cycle will be used to explain, uncover and critique the scientific process.
(42) Sketchbook work in collaboration with scientists at Imperial College London, *Loop* (2016) for the Animate Projects Silent Signal project (funded by the Wellcome Trust).
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Appendices:
Prosopagnosia

1. The word prosopagnosia; description, root?
2. How does a prosopagnosic register a face?
3. Retention of information, is it the face or the facial features? Ears?
4. What are the levels of prosopagnosia?
5. Least and most extreme?
6. What does knowing about prosopagnosia teach us about the brain?
7. Is anthropomorphism function of the 'healthy' brain?
8. What does a prosopagnosic see when they look in the mirror?
Phantom Limb Syndrome

1. How long has phantom limb syndrome been studied?
2. What causes it? What therapies are available for it? Do the people who have it report similar sensations or are they all different?
3. From the people you have talked to is there a more usual limb to lose?
4. Do the sensations change depending on which limb they lose?
5. Does the method of losing the limb (e.g. whether traumatic or under anaesthetic, unexpected or planned) make a difference in how they experience sensations on their phantom limb?
6. What are some unusual phantom limb experiences?
7. Do the feelings diminish over time?
8. Does everyone who loses a limb experience phantom sensations?
Questions for interview with Sam Moore 15/16\textsuperscript{th} July 2011

I am sending you the list of questions in advance so that you can see what kind of approach I will be taking to our interview. The interview itself will be fairly short and informal, with a small digital recording device and microphone to record what you say.

If there are any of the questions that you would rather I didn’t ask then please let me know, either in advance or on the day. I’ve clustered the questions according to subject. We may well cover all of the sub-questions within one answer; that’s fine.

Thank you once again for agreeing to take part in this research!

- What is your name?
- What limb are you missing?
- How did you lose it?

- When did you begin to get phantom feelings where your limb had been?
- How did it begin?
- How does the phantom manifest itself?
- What did you think?

- Do you visualise your phantom limb?
- Can you describe your phantom limb?
- Do you feel like it's yours?
- Where does it start and where does it end?
- Are there missing sections (e.g. shin) that you cannot feel?

- Does it hurt you or cause pain?
- Do the sensations you feel in your phantom limb feel familiar (i.e. you might feel them in your existing limb) or are they unfamiliar?
- Have you ever had therapy to try and ease the sensations (e.g. mirror box)?
- Did it work?
Initial questions for people with prosopagnosia before talking to Ashok:

1. When and how did you first realise that you had this?
2. When you look at a face, what do you see?
3. Can you draw it? NB template of a facial outline?
4. Can you recognise faces in photos? NB photo of me or Ash?
5. Can you read emotions on faces?
6. Does strong emotion affect your perception of the,? NB photos of some faces registering strong or no emotion?
7. Does the environment you see people in affect your recognition e.g. In a crowd (sensory overload/deprivation)?
8. Do you recognise animal faces?
9. Do you recognise caricatures or line drawing of faces? NB caricature of Ash?
10. When you look at a face what exactly do you see?
11. When you look at a face what are the strategies you use to try and remember that person?
12. Does it help to use a grid over images (e.g. Chuck Close)? NB jpegs of his work
13. Does making a grid make sense as an approach to you?
14. What strategies do you employ to remember people in your family?
15. Is the 3D aspect of faces a problem for you? i.e. when a face moves it becomes different
16. How has it affected new relationships in your life since becoming face blind?
17. How does it affect everyday life, i.e. human connections?
Revised individual questions for prosopagnosia interviewees

Andy:
1. When and how did you first realise you had face blindness?
2. Can you describe what you see when you look in the mirror? Could you draw it?
3. What strategies have you devised to try and remember faces?
4. Is it easiest to recognise a face: in a photo? in a line drawing? as a caricature? By using a grid/dividing up the face?
5. Do you have any problems reading emotions on faces? Can it alter your recognition?
6. Does the environment where you meet someone effect your retention of their face (e.g. in a busy place=sensory overload, quiet=deprivation)?
7. Do you recognise animals' faces?
8. Is the 3D aspect of faces a problem to you?
9. How does it affect your everyday interactions with people?
10. Do you tell people? Why/not?
11. How does it affect new relationships you make?
12. Do you recognise yourself in the mirror?

David:
1. When and where did you first realise you had it?
2. Can you describe what you see when you look at a face?
3. What strategies do you use to remember people?
4. Is it easier to recognise: photo? A caricature? Eyes?
5. Do you have any problems recognising strong emotions on a face? Does it alter your recognition?
6. Does the environment where you meet someone alter your ability to recognise them?
7. Do you recognise animals faces?
8. Is the 3D aspect of faces problematic to you?
9. How does it affect your everyday interaction with people?
10. Do you ever tell people? Why/not?
11. How does it affect current and new relationships?
12. What do you see when you look in the mirror?

Claire:
1. How did you develop prosopagnosia?
2. Can you describe what you see when you look at a face?
3. What strategies do you use to remember people? Other senses? Smell?
4. Is it easier to recognise a photo? A caricature? A particulate feature?
5. Does the environment you meet someone in alter your ability to recognise them?
6. Do you like parties?
7. Do you have problems with animal faces?
8. How does it affect your every day interactions?
9. Do you regularly tell people? Why/not?
10. How has it affected your pre/post encephalitis relationships?
11. What do you see when you look in the mirror?
PARTICIPANT INFORMATION SHEET - SENT TO ALL PARTICIPANTS

Phantom limb Animated Documentary
Participant Information Sheet

Samantha Moore, Post-graduate research student (PhD by practice candidate),
S.Moore@lboro.ac.uk Tel: 07946064774

What is the purpose of the study?

This interview is being recorded for the purpose of using it in a short animated documentary film. The film will form part of Samantha Moore’s PhD by practice work. It may also be screened at film festivals, online or in other public spheres. You will be kept fully updated of all screenings.

Who is doing this research and why?

This study is part of a student research project supported by Loughborough University. The supervisors are Professor Paul Wells and Christin Bolewski. The research student is Samantha Moore.

Once I take part, can I change my mind?

Yes! After you have read this information and asked any questions you may have we will ask you to complete an Informed Consent Form, however if at any time, before, during or after the sessions you wish to withdraw from the project please just contact Samantha Moore. You can withdraw at any time, for any reason and you will not be asked to explain your reasons for withdrawing.

How long will it take?
Approximately 40 minutes. If more interviews are required they will be negotiated with the participant.

What will I be asked to do?

You will be e-mailed a list of questions in advance and if you are uncomfortable about any of them they will be removed. On the day of your interview you will be asked those questions and your answers will be recorded. The interview will be informal and discursive, if you are uncomfortable at any time it will be stopped.

Once the material has been collected you will be sent information via post or online about the progress of the project and you may be asked to comment or feedback on the material you are shown to make sure that your experience is being correctly represented.

What personal information will be required from me?

e-mail details, address for postal correspondence

Are there any risks in participating?

No

Will my taking part in this study be kept confidential?

Yes. Your name will only be used if you give explicit permission. You will get a credit in the film and a copy of the final work on DVD.

What will happen to the results of the study?

It will be used in a short animated film. Your participation in making sure your experience is fully explained will be invaluable. The personal information about you will be held for one year after the film is finished so we can keep you informed about the progress of the film (screenings etc.).
What do I get for participating?

Any travel expenses incurred can be reimbursed.

I have some more questions who should I contact?

Sam Moore

S.Moore@lboro.ac.uk / sam@samanthamoore.co.uk / tel: 07946064774

What if I am not happy with how the research was conducted?

The University has a policy relating to Research Misconduct and Whistle Blowing which is available online at http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing(2).htm
E-mail correspondence : Phantom Limb syndrome

15th March 2011

Hi Sam,

Sorry for not getting back to you sooner. For obvious reasons I can't pass the amputees' details on to you. However, if you write a little blurb about yourself, your link to our lab group, what you're doing and what you'd expect from them, I can forward your message to amputees who have an interesting story to tell, or who might be keen to help you out. As soon as you send me this, I will send it onwards.

Best,
Aviva

Letter from Viva Goller to the potential interviewees for the project, March 2011:

Phantom Limb interview for animated film request

Animator Samantha Moore is making a short film about phantom limb syndrome for a PhD project and would like to talk to anyone who has experience of this. The interview would be sound recording only and participants would have full input over what material was used in the final film.

Sam's previous film An Eyeful of Sound won the Nature award for scientific merit at the Imagine Science Film festival in New York (Nov 2010) and has been screened all over the world. Her PhD is about representing unique brain states (like phantom limb syndrome or synaesthesia) using animated documentary.

Please contact her via sam@samanthamoore.co.uk

7th April 2011
Dear Sam,
Aviva asked me to contact you, as she knew that I would be very pleased to help you with your project if I can. I lost my left leg below the knee twenty years ago and "enjoy" all kinds of extraordinary sensations in the missing foot on an almost daily basis. Only occasionally are these sensations painful, mainly they are surprising, or simply familiar.
You can reach me on my home phone: [xxx] or Mobile [xxx]. My e-mail is [xxx]
With kind regards, Stephen

7th April 2011
Dear Stephen Thank you so much for responding to my request, I am delighted that you are available to be interviewed. I am based in Shropshire so I would like to arrange a time in May or June for our talk, if this would suit you? It will probably be easiest if I drive down to your house, would that be acceptable? If not then we can meet at the University of Sussex where I can book a room, or in Midhurst as I see that is close to you (if we can find somewhere quiet to record sound). The interview itself would be sound only as I shall be animating the images. Animation is a slow and laborious process (it takes 25 pictures to make 1 second of moving image!) so this project won't be quick. I am studying for a PhD by practice (this means that as well as reading, and writing a dissertation, I am making practical work, in this case animated film) at the University of Loughborough. I have been making animated documentaries since 2003, and have made work for Channel 4, Arts Council England and, most recently, The Wellcome Trust. You can see some of my previous work on my website http://www.samanthamoore.co.uk Part of my work method with animated documentaries is to really include the interviewees in my working process. Don't worry, I'm not going to over-load you with stuff, but as I start to develop the visuals to go with your words I think it is important that what I'm showing is 'correct', i.e. that it correctly reflects your experiences of having a phantom limb. So, I may send a short animated clip, some still images, or even just some sound that I have edited together, to make sure that you agree and am happy with my portrayal of what you have said. I might not have anything to send for a while (I finish the PhD in 2013 so it'll have to be before then!). If any of this sounds like it's not your cup of tea then I shan't be offended, but if you would still consent to be interviewed I will be delighted. Thanks again for your help and if you would like to be involved then please let me know if there are any good/bad dates for you in late Spring / early summer? best wishes
Sam
7th April 2011

Dear Sam,

I’d be delighted, there is no risk of overload, I’d enjoy whatever level of involvement is required, and I doubt if there are any aspects which could possibly upset me!

We live in a 15th Century farmhouse in the middle of nowhere, very peaceful, no neighbours, and with all the space you are likely to need. It would be our pleasure to invite you here. My wife is a passionate cook and you will be well fed! As it happens her mother was a well-known (in Poland) film animator, and her best friend and godmother to our son is a multi-award winning animator in Sweden! We will have plenty to talk about.

There are very few dates that are unsuitable, avoid May 11th to 14th and May 28th-29th, otherwise any date is fine.

Look forward to meeting you.

…

Regards, Stephen

7th April 2011

Hi Sam I understand from Aviva that you are looking for people to help in your phantom limb syndrome film I have one leg and phantom leg

So if you would like any help for your sound recording just ask ok

Pete

7th April 2011

Dear Peter

Thank you so much for responding to my request, I am delighted that you are available to be interviewed. I am based in Shropshire so I would like to arrange a time in May or June for our talk, if this would suit you? It will probably be easiest if I drive down to your house, would that be acceptable? If not then we can meet at the University of Sussex where I can book a room, or somewhere else that is close and convenient for you (if we can find somewhere quiet to record sound).

The interview itself would be sound only as I shall be animating the images. Animation is a slow and laborious process (it takes 25 pictures to make 1 second of moving image!) so this
project won’t be quick. I am studying for a PhD by practice (this means that as well as reading, and writing a dissertation, I am making practical work, in this case animated film) at the University of Loughborough. I have been making animated documentaries since 2003, and have made work for Channel 4, Arts Council England and, most recently, The Wellcome Trust. You can see some of my previous work on my website http://www.samanthamoore.co.uk

Part of my work method with animated documentaries is to really include the interviewees in my working process. Don’t worry, I’m not going to over-load you with stuff, but as I start to develop the visuals to go with your words I think it is important that what I’m showing is ‘correct’, i.e. that it correctly reflects your experiences of having a phantom limb. So, I may send a short animated clip, some still images, or even just some sound that I have edited together, to make sure that you agree and am happy with my portrayal of what you have said. I might not have anything to send for a while (I finish the PhD in 2013 so it’ll have to be before then!). If any of this sounds like it’s not your cup of tea then I shan’t be offended, but if you would still consent to be interviewed I will be delighted.

Thanks again for your help and if you would like to be involved then please let me know if there are any good/bad dates for you in late Spring / early summer?

best wishes
Sam

PS I couldn’t access the web link you sent, could you send me your postal address if you are up for being interviewed?

7th April 2011
Hi Samantha,

Aviva has asked anyone who wishes to help you in your animation project to contact you directly, I am happy if I can help you in any way. Please contact me.

regards
Dear Dave

7th April 2011

Dear Dave

Thank you so much for responding to my request, I am delighted that you are available to be interviewed. I am based in Shropshire so I would like to arrange a time in May or June for our talk, if this would suit you? It will probably be easiest if I drive down to you, would that be acceptable? If not then we can meet at the University of Sussex where I can book a room, or somewhere else that is close and convenient for you (if we can find somewhere quiet to record sound).

The interview itself would be sound only as I shall be animating the images. Animation is a slow and laborious process (it takes 25 pictures to make 1 second of moving image!) so this project won’t be quick. I am studying for a PhD by practice (this means that as well as reading, and writing a dissertation, I am making practical work, in this case animated film) at the University of Loughborough. I have been making animated documentaries since 2003, and have made work for Channel 4, Arts Council England and, most recently, The Wellcome Trust. You can see some of my previous work on my website http://www.samanthamoore.co.uk

Part of my work method with animated documentaries is to really include the interviewees in my working process. Don’t worry, I’m not going to over-load you with stuff, but as I start to develop the visuals to go with your words I think it is important that what I’m showing is ‘correct’, i.e. that it correctly reflects your experiences of having a phantom limb. So, I may send a short animated clip, some still images, or even just some sound that I have edited together, to make sure that you agree and am happy with my portrayal of what you have said. I might not have anything to send for a while (I finish the PhD in 2013 so it’ll have to be before then!). If any of this sounds like it’s not your cup of tea then I shan’t be offended, but if you would still consent to be interviewed I will be delighted.

Thanks again for your help and if you would like to be involved then please let me know if there are any good/bad dates for you in late Spring / early summer?
best wishes
Sam

9th April 2011

Dear Samantha,

Wonderful, I'll wait to hear re; a date. Bring your husband too if you like, and if you have any children we have a big trampoline in the garden to keep them entertained. (Kids and dogs always welcome). We had a barbeque for about thirty last night, including 13 children at which our son Johnnie managed his first complete somersault landing back on his feet! I have to say that is one of the (few) things I don't think I'll ever manage to do on account of my leg!

Kind regards Stephen

11th April 2011

Have you heard from Dave? See below. Have any of the others gotten in touch? I contacted the woman with the finger stubs you were interested in and some other amputees.

Best,
Aviva

14th April 2011

Hi Samantha,

Well that all sounds absolutely brilliant, I have liked animation for a long time and I like the idea of what you are doing. I am aware of the persistance of vision hence 25fps etc as I am an engineer and can understand the lengthy process. I am entirely happy to help you as far as I can so send what you need when you need.

If you let me know what is best for you in terms of date and venue for the interview I am sure I can fit in to your needs, may/june at my house would be fine.
all the best for now

Dave

25th April 2011

Hi Sam sorry I have taken a while to get back to you
Just been a little busy
If you wish to come to my house that would be great
I am busy with work so aprt from the 11th of june and 12th
My birthday party
Most any time may be ok as I am self employed and could work around things for you
Best you say dates you would like to do and I try and set them in my diary
Ok
Sounds like fun to me and great to be able to help you on your Phd
Pete

Sorry again you could use my party night the 11th of June for filming if you so wish as I love to dance
And will be doing lots on that night just an idea ok
Pete

26th April 2011

Hi Dave

Sorry for the delay in replying to you, I had some leave over Easter and we took a family break (mainly from the computer!).

I shall take a look at dates in May / June and get back to you with some possibles to choose from in the next couple of weeks.

best wishes
28th April 2011

Dear Samantha,

That's all fine, we're very easy re dates, and looking forward to seeing you.

Kind regards Stephen.

23rd May 2011

[To Dave, Stephen & Pete]

Hi there

I can finally suggest some dates when you may be free to be interviewed by me for my PhD phantom limb project. I have grouped the possibles into twos, so if you wouldn't mind taking a look at these dates and let me know which - if any - are convenient for you.

DATES:
11/12, 14/15 or 26/27 July 2011

Thank you so much for your willingness to take part in this and I look forward to meeting you soon!

best wishes

Sam

23rd May 2011

Dear Samantha,

There is nothing in the diary for any of those dates yet, so shall we pick the 11th/12th? I can then arrange anything else that needs scheduling around that.

I am not sure if you have had any directions yet so here they are:
Postcode for SatNav is [xx].

...
What time do you expect to come? We will be very pleased to offer you lunch etc.
Kind regards Stephen.

24th May 2011
Hi sam the 14 and 15th of july would be great for me
If fine with you I have added to my diary for you booked
Be great to meet you and help all I can
Pete

1st June 2011

Hi Samantha
Sorry for delay, all the dates are fine but I prefer the 26/27 July if ok ?
regards
Dave

2nd June 2011

Hi there

I’m so sorry about the delay in getting back to you all, I had to wait until I had all your dates
so I could work out which days would suit everyone. Of course (sod’s law!) you have all
chosen different dates! So may I suggest that you choose either the 14th or the 15th July
for me to come and interview you and if this is impossible for anyone then I will think again.
Sorry to make it so rigid, because it will take me about 4 hours to drive down I am trying
to get it all done in one overnight trip so I can consolidate my childcare etc.

I do hope that you are all well and enjoying some of the sunshine that briefly poked its head
out here in Shropshire yesterday! ;)

best wishes
Sam

2nd June 2011
Dear Samantha,

I am keeping both 14th and 15th July free for you, so you can let me know which when you know other people's preferences.

regards Stephen.

2nd June 2011

Hi Sam the 14th or 15th will be fine whatever suits your timing

Best ok

Pete

If you require a place to stay

Feel free I have room available

If any good for you ok

Pete

3rd June 2011

Hi Samantha

The 14/15th is fine for me.

regards

Dave

...

27th June

Hi Dave

I'm just sorting out the details of my trip down to interview you. My plan is to see you on the Friday morning (15th July), about 10:00 if that will suit you? I think I can find my way to yours, thank heavens for Google maps! I'll be seeing the two other participants the day before and I think I've worked out a cunning circular route.
I am attaching the ethics guidelines for my project. When we meet I will have an 'informed consent' form for you to sign if it's all OK with you. I shall e-mail the questions a couple of days before we meet so you can have a look over and check that you're comfortable with them all. The interview will be very informal, with just a mic and a small recording unit, and will be conversational in nature so not too awful I hope!

thanks and best wishes, see you soon

Sam
27th June 2011

Dear Samantha

That's all fine, including everything in the attachment of course.
Lunch is never an imposition, there is always something to be had, even if it's just a salad and a glass of something. I've no idea where Willingdon is or how long it takes to get there either!
See you whenever you get here on 14th.
Regards Stephen.

29th June 2011

Hi Samantha,

10am on the 15th sounds good to me. There is nothing as good as a 'cunning plan', you should not have to much difficulty finding the bungalow there is an old Sherpa camper van out front and 'STUFF' on the front drive!!

The mic etc is fine, if you need any images then that is not a problem also.

Looking forward to meet you

Dave

30th June 2011

Great, thanks Dave, see you then!

best wishes
Sam

11th July 2011

Hello there
I am sending you a list of the questions I shall be asking you on Thursday/Friday during our interview. Please have a quick read and if there's anything you'd rather not answer or go
into then let me know and I will cut it. The interview will be informal and conversational so I'm equally happy to play it by ear as I'm sure there will be lots of interesting information that you'll have which I haven't thought of to ask about! In any case this list will give you some idea of the range of questions we'll be discussing.

Thanks again and see you later in the week! BTW, my mobile is [xxx].

best wishes
Sam

Questions for interview with Sam Moore 15/16th July 2011

I am sending you the list of questions in advance so that you can see what kind of approach I will be taking to our interview. The interview itself will be fairly short and informal, with a small digital recording device and microphone to record what you say.

If there are any of the questions that you would rather I didn't ask then please let me know, either in advance or on the day. I've clustered the questions according to subject. We may well cover all of the sub-questions within one answer; that's fine.

Thank you once again for agreeing to take part in this research!

- What is your name?
- What limb are you missing?
- How did you lose it?
- When did you begin to get phantom feelings where your limb had been?
- How did it begin?
- How does the phantom manifest itself?
- What did you think?
- Do you visualise your phantom limb?
- Can you describe your phantom limb?
- Do you feel like it's yours?
- Where does it start and where does it end?
- Are there missing sections (e.g. shin) that you cannot feel?

- Does it hurt you or cause pain?
- Do the sensations you feel in your phantom limb feel familiar (i.e. you might feel them in your existing limb) or are they unfamiliar?
- Have you ever had therapy to try and ease the sensations (e.g. mirror box)?
- Did it work?

11th July 2011
Dear Samantha

No problems with any of the questions, ask away!
I have scheduled you for Thursday 11.00am so I hope you can still come then as I have some work on Fri morning. I can manage anytime Thursday but if for any reason you are stuck and have to do Friday then best make it mid to late afternoon. Hopefully Thursday is still OK for you.
Regards Stephen.

15th July 2011

Hi Sam,

Further to our conversation today the mandelbrot set is classed as a FRACTAL, if you explore fractals you will find some amazing images and ideas.

Thanks again for the meeting I now have some new ideas to investigate, I do love a good brainstorming session.

regards

Dave

18th July 2011
Excellent, thank you for that Dave. It was great to meet you and I really enjoyed our chat. I will be getting back to you with some images which it will be interesting to compare against your experiences!

Thanks again for your time and hospitality.

speak soon,
best wishes
Sam

18th July 2011
Hi Stephen

It was great to meet you and I really enjoyed our chat. I will be getting back to you with some images which it will be interesting to compare against your experiences!
Thanks again for your time and hospitality, hope that Jonnie enjoys the rest of his holidays (mine are off at the end of the week - arg!).

speak soon,
best wishes
Sam

18th July 2011
Hi there Sam it was great meeting you too
And any thing I can do any time for you to help just ask ok
My love and friendship goes out to you and all
My date Thursday was very nice and I must say my weekend has been the best yet as Friday I was with
An old friend karen who is now my girl friend and a very lovely lady she is
.
Feel free to add me on face book if you so wish as a friend take care
Pete

20th November 2011
Hi Dave
Finally I have something to show you. Here is an animated version of the conversation we had about your foot growing as your amputation site was stimulated. I wonder if you could take a look at it and let me know what you think? The password is 'Dave', and no one else has access to the clip. Let me know if you have any problems with viewing it and I'll send you a DVD. If you'd rather respond verbally then I can arrange a time to talk to you on the phone or Skype.

Hope you're well!
best wishes
Sam

22nd November 2011

Hi Sam

Brilliant! I love it, even the stump length is correct. The one thing I might say is that the expanded phantom foot could actually grow so as to encompass me entirely, also the foot appears to me more as an array of point sources, like a constellation if you like. This may be a little more difficult for you to render but I'm quite sure you are more than able to accomplish it. :-)

By the way, since our meeting my Mum has had her leg amputated above knee :- ( We are now able to talk about her experiences. It may be of use for your work, in that her experience is fresh and she is undergoing the process of body/mind remapping currently. If so let me know as my Mum would be 'up for it' as they say. She is aged 80 if it makes a difference.

Keep doing it
all the best
Dave

24th November 2011

Hi Dave
Thanks so much for your feedback, that’s really helpful. I’ve attached a sketch of what I think you mean, perhaps you can take a look and see what you think? I also wondered about the top of the thigh being represented, you said that you can’t feel it so I think I should probably get rid of it too? I tried to make the leg/foot look like points by using a grainy chalk on a rough paper but it obviously doesn’t look ‘pointy’ enough so I’ll need to rethink that. All of the image is up for discussion & revision so please be as picky as you need to be!

I’m so sorry to hear about your mum, how awful for her. She sounds like an amazing character though if she’s willing to talk about it now. Thank you for the offer, I’ll get back to you after Christmas if that’s OK.

Take care and speak soon, thanks again for the comments!

best wishes

Sam

28th November 2011

Hi Sam

The new idea is far more like the image in my conscious mind, the idea of grainyness or rough paper may work.

Another aspect to consider and good for animation is - the points or stars of the sensation are pulsing or modulating in their intensity and although I attribute no actual colour to them they appear as a metallic silver! If you have any dental fillings of the amalgam type then biting on silver paper causes a certain reaction, it gives me a similar ‘metallic silver’ taste sensation as the stars of the foot give a ‘metallic silver’ colour.

I agree that the top half of the shin and the lower half of the thigh should go.

I am finding this exercise with you and your work fascinating and enjoyable, thanks. My Mum is more than happy to help if she can :-)

all the best

Dave

29th November 2011
Hi Dave
That's really helpful about the points pulsing and the fact that they have a colour. You reference a taste with the colour; do you feel the sensations in your mouth too in the same way that you feel the colour? The images you use are interestingly like synaesthetic reactions, many of which will span different senses (taste, touch, sight). I'm going to try to put the animation in more of a 3D environment so the viewer can see the foot encompassing the figure.
I'll give it another go with the changes we've discussed and then we'll see how it is working. I'm glad you're enjoying the process, I'm finding it fascinating!

Best wishes
Sam

9th January 2012

Hi Sam
Happy new year to you and yours.
The changes you have made are brilliant, much more as I envisage a third party perspective. I like the idea of a 3D environment I await your next offering.

best wishes

Dave

23rd January 2012

Hi Dave
here's the next rough pass at it, have a look and see what you think. http://vimeo.com/35516833 password: silver
Is the final foot large enough? Not sure if it has the proper 'enveloping' quality...

Sam

23rd January 2012
Hi Sam

Yes that is far more like it would appear to an onlooker, the final foot size could be doubled I think as I am fully enclosed and centred within the image.
Brilliant work hope it is going well for the others to.

Dave

2nd March 2012
Hi Dave

OK, I have made a tweak and made the silver foot bigger so that it now encloses your whole body, see if that is the right scale? The animation itself is a place holder - I will do it again once the basics are right. Find it here, https://vimeo.com/37799280 with the password 'Bigger'
I'm glad you're enjoying the process, I am working with two other people who have a brain trait called prosopagnosia (face blindness) but haven't even *started* tackling the other phantom limb interviewees - it's such a mammoth task I've set myself! I'm hoping to get more done on the next couple of months but the balance between work, study and home is always a tricky one! Your descriptions were so vivid and articulate that I wanted to start with you.

Can I ask if the silver points are correct or should they be pulsing more? Or sparklier or more metallic looking? Any feedback welcomed!

best wishes and hope that you and your family are all well
Sam

20th March 2012
Hi Sam

Sorry for the delay in replying, the new animation is far more like my experience. I think the points could be pulsing slightly more and more metallic for sure, I'm not sure if sparkly is right - maybe shimmering, see what you can conjour.
Yes the process is fascinating and I am only to keen to help. The balance in work/home life is a very difficult one! So good luck in your mammoth task.

Best wishes to you and yours, me and mine are fine.

Dave

21st March 2012
Hello there

I hope that you are well and remember having a strange lady come round to interview you for her animation project?!
I know it's been a while (I told you that animation takes ages) but I've finally got a clip of animation to show you. I passed my first year and have completed a good chunk of the writing part of the PhD so I am now free to do the practical part. I have been working with another guy with a phantom limb on a short sequence which I’d like to show you - it's here https://vimeo.com/37799280 and the password is "bigger". You may not have had this sensation but I'd be really interested to know if you have, and also what you think about this representation of an experience you share.
You will notice that his leg is rendered in little dots rather than lines. I was fascinated to hear from him that he experiences his phantom as a series of metallic dots, or points. They pulse slightly, and seem to be in relation to where his nerve endings would have been. Do you have this sensation? How does your leg feel to you in terms of flesh/sensations/colours? I've heard phantoms described as 'like having pins and needles' many times and based on that the description of pulsating metallic dos makes perfect sense to me! If you have any light to shed on this then I would be really grateful.
If you'd rather talk on the phone than e-mail me back about this then let me know and I'll arrange a time to call you. Otherwise I look forward to hearing from you and hope that everything is going well for you.

best wishes
Sam
21st March 2012
Dear Samantha,

It is good to hear from you, and I'm glad you have been making good progress. I haven't seen the clip yet; I couldn't get it to accept the password, let me know if it has changed or what I might be doing wrong.

The description of metallic dots is a very good one, and yes I get exactly that. In addition the dots sometimes move like having bubbles under the skin, or even the idea that there are little creatures wriggling about inside. This is probably the pulsing he refers to, as that is a good alternative way to describe them. I certainly get pins and needles too, along with jabs that actually hurt. The dots and bubble, pins and needles don't hurt, they are just sensations.

As for flesh I hadn't really given that much thought, nor colour. The only other insight that springs to mind right now is that having sensations in my missing foot means I can feel both feet, just as everyone else can, so it adds a degree of normality back to the situation. I use my prosthesis a lot, as I am a truck driver, and it is my clutch leg, apart from everything else, so all day long, day in day out I rely on it being as much like a real one as possible, and in twenty years it hasn't let me down in this regard.

Very happy to talk on the phone anytime too, the number is 01428 741212, or mobile 07758 555 6796.

Looking forward to seeing the result, kind regards Stephen.

21st March 2012
Hmm… that's odd. Try http://vimeo.com/37799280 and password Bigger (capitalised) ...see if that works? If not then I will send you a DVD in the post.

Thanks so much for your thoughtful reply, it's really helpful. The bubbles imagery is really good, although the creatures one sounds slightly scary! I will do some sketching and perhaps you could comment on them for me if I e-mail the images?

Thanks again Stephen and hope the link works this time.
7th April 2012
Hi Stephen
I hope that you are well and enjoying your Easter!
Here is a sequence based on your description of the 'bubbles' in the phantom limb. You can access it here https://vimeo.com/39934442, password is "Bubbles".
See what you think, any feedback would be helpful. I have tried to contextualise it with the images of the foot: see how accurate you find it, and whether or not it evokes any of the sensations you described.

take care and best wishes
Sam

8th April 2012
Dear Sam,
It's midnight and I've just got home from a party so I'll look at it tomorrow, but there was something I meant to tell you. When I was injured I also badly damaged my left hand. Both my left leg, foot and left arm and hand became very hairy, including the hairs on my fingers and toes (prior to amputation), at least twice as pronounced as my right side. It was quite extraordinary, like a defence reaction or something quite primeval, then it all reverted to normal after a while! Nothing to do with phantom pain, but an interesting phenomenon nonetheless. I felt a bit like a werewolf on one side only!
All the best, Stephen.

8th April 2012
Wow, that's bizarre/amazing! How long did it take to get back to the usual level of hirsuteness?
Hope you're not hungover and have a good Easter Sunday. Let me know if there aren't enough bubbles, I animated them individually so at some point I just had to stop and leave it before I went potty but I can go back... ;)

best wishes
Sam
best wishes
Sam

19th April 2012
Hi Stephen
I wondered if you'd had a chance to formulate any reactions to the bubbly foot sequence yet? After talking to my supervisor yesterday I wondered if having sound on this clip would make any difference to the way in which you perceive this and how well you feel it evokes your experience. Therefore I've made a new clip with sound which is here https://vimeo.com/40650978 with the password 'fizz', and the silent clip is here https://vimeo.com/39934442, password 'Bubbles'. See what you think, any feedback would be helpful if you have a few minutes to spare.
Thanks again for your help and hope that you had a good Easter
best wishes
Sam

19th April 2012
Dear Samantha

I find this project very interesting, and one reason it is interesting is that it is to some extent quite mysterious. Phantom sensations are mysterious in themselves, and communicating them is not an easy thing to do. I am assuming your aim is to try and portray them to someone who does not know what they feel like, in a way that helps them to understand them better. Apart from talking to you, I never really attempt to describe it to anyone, assuming most people would have only the tiniest interest!

It is relatively easy to say that every now and then it feels like a horse has stepped on your foot, or that someone has unexpectedly jabbed a fork into your instep, but these other sensations are so much more subtle that they are much harder to describe accurately. The bubbles I experience are trapped in channels like veins and course under the skin, while the ones in your film are free in a kind of open atmosphere. The fizzing I experience is a little bit more like a mild electric shock than a Gin and Tonic! I don't know if this is helpful for you or if it fits with your other case study's experiences. There is one other thing that I notice, and that is there appear to be areas that the bubbles never go. Where they do go,
because they feel like they are being forced through veins or channels, they travel at
different speeds, sometimes getting trapped, or forced through narrow confines, altering
their rate of progress, and therefore not feeling free or floating like those in the film. They
also travel in a wide variety of directions, and sometimes are stationary, such that they are
concentrated in an area where they are being generated, but not moving away. This is a
version of electric tingling perhaps, but it does sometimes still feel like bubbles being
formed and popped without going anywhere far.

Always happy to share thoughts, kind regards and best wishes, Stephen.

19th April 2012
Hi Dave
Thanks so much for that, I'll take your notes about the points being more metallic, pulsing
& shimmering, that's really useful. I think I may take it into another programme and build an
emitter to represent it better.

In the meantime I have been working on the two other collaborators' experiences, and I
wondered if you could take a look at them and see if they have any resonance for you?
There are two, but one of them has two versions; one silent and one with sound. I'd
appreciate any feedback you'd have, because it seems as if the experience of having
phantom limbs has a lot more similarities than the other brain state that i am working with.
Do any of these clips ring a bell with you?
https://vimeo.com/40650978 password 'fizz'
https://vimeo.com/39934442 password 'Bubbles'
https://vimeo.com/40660945 password 'Night'

Thanks very much and I'll get back to you when your new sequence is ready for you to
look at.
best wishes
Sam

20th April
Dear Stephen
Thanks for your thoughtful and considered feedback, I really appreciate it. Yes, it is interesting to me for the same reasons; we so rarely ask those questions of each other: how do you experience the world? What do you feel? Because you have had part of a limb amputated I guess people generally don’t question you too closely about your experience for fear of seeming too ghoulish! Luckily, I have no such scruples!

That’s really helpful info about both the behaviour of the bubbles and the sound. It doesn’t matter if it doesn’t fit in with anyone else’s experiences because it is uniquely yours. However, I do think that there are more shared similarities in phantom limb owners’ experiences than there are in other unusual brain states, as evidenced from the comments from my other interviewees. I shall get on with changing the sequence and will send it to you when it is ready. Quick question: when you talked about the burrowing creatures, do they move in the same way through veins or channels as the bubbles do? That would be really helpful to know.

Thanks again and I hope that this is as fascinating for you as it is to me!

best wishes

Sam

20th April 2012

Dear Pete,

I don’t know if you got my e-mail about the progress of this project but I thought it might be easier for your to look at a DVD anyway and then let me know (via e-mail or by post, it’s up to you) what you think.

I am including several different clips on the DVD, one of them is inspired by a story you told me and the others are how other interviewees have described their experiences. This is all work in progress, so what I’d like from you is some idea of how resonant, or ‘true’ to your experience you find the clips. Don’t worry about being too critical (I’ve already been told that the bubbles don’t move correctly and it’s more like electricity than a G&T!), as the more details you can give me about your experience the better. There’s one clip that is on there twice – one with sound and one without. It would be helpful if you could let me know which was more evocative of your experience of phantom limb.
If you’d prefer to tell me over the phone than write it down I can arrange a time to call you. I do hope that you’re well and that your business is booming. It’s so wet here; practically my whole garden is wetlands and pond at the moment!

Best wishes,

Sam

22nd April 2012
Dear Samantha,

The description of bubbles coursing in confined spaces and creatures burrowing are really one and the same, just different mental pictures.

Kind regards Stephen.

22nd April 2012
Hi Sam

That is amazing, I can relate entirely to all three animations - fizzing and bubbling are very apt descriptions of the type of sensations I experience, although I have much less audio disturbance.

with regard to the 'forgetting about no leg' problem then again I have the experience but during anytime of the day or night. It seems to be more of a problem if an immediate response is called for ie an automatic unconscious action/reaction is required. Also this has become less of a problem as the years have gone by.

regards

Dave

25th April 2012
Great, thanks Stephen. I’ll get on it and send you the new version as soon as poss.

best wishes

Sam

26th April 2012
Thanks for looking at those Dave, that feedback is really helpful. I do think that there are more shared similarities in phantom limb owners' experiences than there are in other unusual brain states, as evidenced from the comments from my other interviewees.

I don't think that Stephen actually hears the fizzing but I was trying to make it as evocative as possible and I wondered if sound would help. It's tricky to represent one sensory experience using a different sense (touch sensations replaced by visuals) so I thought that by layering in more senses (sound) it might help evoke it more correctly. He said it was wasn't right anyway - it should be more like electricity than fizzy drinks and the bubbles go in specific directions. I'm looking at patterns of nerves in feet to see if that pattern would fit his experience better.

Hope you are all well and that your mum is coping OK with her new situation. I'll be back to you soon with the new versions of your foot - I hope :)

best wishes
Sam

8th February 2013

Hello there,

I hope that you are all well, and that spring will arrive in your part of the world soon!

I am e-mailing because in the next few days I shall be popping a DVD in the post to you. It contains a compressed history of our talks, e-mails and animation (total running time: around 20 mins).

I would very much like you to have a look at it when you have time, and give me any feedback about the contents. I would like to make sure that everything I have included is a fair representation of what we discussed and any feedback on how helpful you find the animation in describing your phantom limb experience would be great. I am nearing the end of my PhD now and am wrapping up this part of the project.
Best wishes to all of you and huge thank-yous for all your involvement so far, it's been invaluable and you have all been very generous and kind with your time, and thoughtful responses to my questions.

best wishes
Sam

13th February 2013

Hi Sam yep have just had your dvd arrive I will
Watch it in the next few days and give you feed back ok
Pete

13th February 2013

Great Pete, thanks, I really appreciate it!
Hope that all is well with you,

best wishes
Sam

2nd March 2013

Hi Sam

Thanks very much for the DVD - I enjoyed it tremendously. My portion of the animation was very accurate, I feel you relayed my experience with your interpretation very well. I also enjoyed watching and listening to the other subjects dialogue and animations, it would appear that we all have some common factors underlying the perception of 'phantom' feelings.

I wish you well in your future and thankyou.
Dave

4th March 2013

Hi Dave

Thanks for your feedback, it is really helpful and thanks also for all your help with this project. Witnessing you 'discovering' the giant foot was one of the coolest things I've ever seen!

best wishes
Sam

6th March 2013

Hi Sam

Your more than welcome, I thoroughly enjoyed the experience. I am glad you shared in the discovery of the ' big foot '. I always enjoy interaction with other people - especially when something new is created.

BFN

Dave

9th March 2013

Dear Sam,

I have just watched your DVD with great interest. It is a difficult subject to tackle I would think, and you have captured important aspects of it very well. I doubt very much if anyone could convey the sensations in a way that a non-amputee could fully and accurately understand, but I'm not sure that's all that necessary if an overall picture can be realised, which I think you have succeeded in doing.
My only criticism of your DVD is that the volume level was too low to hear one of your contributors very well, and the final sequence based on the bubbles moving along channels or veins could be slowed down considerably. They don’t feel as though they are rushing quite as fast as that. That said, the imagery works well.

I don’t really relate to Dave’s experience of becoming enveloped in a giant foot, but I am sure no two amputee’s experiences are the same. I did launch myself out of bed a couple of times in the early days forgetting I had no foot, and I also found I was lifting my leg higher than necessary to turn round in the bath. I was allowing for the full length which wouldn’t normally fit across, and if I was sitting with my leg off it would feel very strange if someone walked through the space where it would have been.

I could probably find plenty more to say if I thought hard about it, but I suspect you have completed your project now.

Wishing you all the very best in whatever comes next in your studies and career. Please do get in touch if I can ever be of use again.

Did you intend for me to keep the DVD or would you like me to return it?

Kind regards Stephen.

11 March 2013

Hi Stephen

Thanks for your comments, that is really useful. The project is not quite over yet so if there is anything other than the speed of the bubbles and the volume levels please do let me know, if you have the time. I think that Dave’s experience of the enormous foot has more to do with where the site of his amputation is (upper thigh). I will slow down the bubbles and send you the link so you can see if they’re the right speed - you said ‘considerably’ so I shall make it a very marked difference. Unfortunately the volume/quality thing was due to a faulty recorder; I had to record Dave on my mobile phone which is really unsatisfactory! I shall try to boost the volume for the final hand-in. I’ve heard it so many times now I don’t really notice the rubbish quality!

The DVD is for you to keep, I hope that it will be useful or interesting and it’s the least I can offer you after your kind and generous participation in the project.

warm regards
Samantha Moore

Out of Sight: Using animation to document perceptual brain states

Sam
E-mail correspondence: Prosopagnosia

30th Nov 2011
To Claire XXXX, David XXXX and Andrew XXXX

Hello there

At (long) last I am able to send you some clips to have a look at. From the chats I have had with all of you there are several visual ideas which are forming, and I have done a brief (7 second) animation of three of them.

It is important to make it clear that you don't have to choose a 'right' one out of these, this is just a starting point for our discussion about the way in which you see faces. This is a process of collaboration with you and any feedback you have will be helpful. You can't be too fussy or too specific! Once the first round of feedback is in I will be able to make changes, scrap ideas or generate new ones, and this back and forth conversation will happen (slowly) over time, directed and contributed to by you. I anticipate making separate animations for all three of you since your prosopagnosia comes from three different sources, so in the future you will probably get individual communication about the work we're making together. I hope that this will be an interesting, insightful experience for you and it may be helpful in explaining the way you see faces to those around you as well as to a wider audience.

The clips can be accessed
here http://vimeo.com/32901409 password 'faceless'
here http://vimeo.com/32899789 password 'bland'
and
here http://vimeo.com/32902099 password 'wobbly'

All the clips are password protected and you are the only people who have access to them. If you would prefer a DVD of the clips please let me know your address and I will post you one.
Thanks for your patience and I look forward to your comments. You can either e-mail your thoughts or I can call you if you would rather respond verbally.

best wishes
Sam

1st Dec 2011
Hey Sam :) 

Great work - and glad to see that you're still plugging away!

here http://vimeo.com/32901409 password 'faceless'
I find that in situations like the supermarket, I tune people out, and they're not much more than obstacles to be avoided. I don't pay much attention to their appearance, but I do notice peacocks more from a security point of view rather than a personal identification point of view. People who have very distinctive clothes or hairstyles are easier for me to recognise, but I'm naturally suspicious of them since they might be using a social engineering technique called "peacocking", where you deliberately wear recognisable items that draw attention away from natural appearance and can be discarded later to avoid identification. Everybody remembers a bright red and green jacket, but probably not the person that was in it. Suspicious of me, I know, but old habits die hard.

here http://vimeo.com/32902780 password 'bland'
This is what I find when I try to concentrate on someone's face to remember it. The more I try to remember it, the more generic it seems to get, but after a long time, I can recognise the face as long as I don't concentrate too hard on it. Does that make sense?

and > here http://vimeo.com/32902099 password 'wobbly'
This is exactly what it's like when I try to draw someone's face. I can't tell if the drawing is right or not when I do it, and when I look, the features seem to be almost shifting when I look between the subject and the sketch. It's not a left brain/right brain thing, IMHO, it doesn't matter if I try to draw around the features, or from the features outwards, or upside down. It just doesn't work in my head. That's why I brought a camera. (That and a complete lack of pencil related talent). Oddly enough, the Thatcher
illusion -where the eyes and mouth are the wrong way up looks extremely strange to me whichever way up it is, although I'm told it's supposed to look normal unless it's the right way up. (http://www.dailymail.co.uk/home/moslive/article-1314281/Ten-greatest-optical-illusions.html)

How are you getting on with the PhD? Into the second year now! I'm wallowing in about 6000 words of my own making this week, but having a whale of a time generally.

Have fun!
Andrew

5th Dec 2011
Hi Andrew

Thanks so much for that response, that is really helpful. Would you be interested in drawing your own impression of what you see when you look at faces? I would love to see your drawings of you were up for it?

The feedback on the clips was very helpful, it was interesting to me that each of the clips was resonant to some extent in different situations, which I wasn't expecting. I have some more ideas about ways to present prosopagnosia, but if you have any input about specific ways to present visuals I would be delighted to hear them.

The PhD is going well thanks, it seems to be cohering better now I am in my second year and I feel like I am beginning to see the start of the ways that it will come together in the end which is exciting (and a relief!). I'm glad yours is going well, I'm so pleased that you are back doing one as it does seem to be the natural next step for your work.

take care and thanks so much again for the thoughtful feedback
Sam

4th December 2011
Hello Sam,
Thank-you for sending these clips, I'll try to put some thoughts down by e-mail but feel I may not be able to say things properly, and may need to speak to you afterwards, please feel free to phone me if I don't make any meaningful words just now--- but I'll give it a go! Kettle on first I think----

Ok,...... 'faceless' - around and about in everyday life, as in the supermarket, I have learned life the hard way and now make sure to be very careful about any eye contact I make and your images are very real to the emptiness that results from this. They do exhibit the characterless blank of a community of faces with little hope of differentiating between each one. Recognizing someone involves seeing familiar features, and their response in expressions and body language help us to remember their identity. Faces are blank to me in a crowd, and it's usually not until their own identity recognition of me becomes apparent by their eye contact, facial expressions and body language that I feel instantly under extreme pressure to respond appropriately myself. Prosopagnosia isn't only having no facial recognition, it involves lack of memory about someone's identity too. Even when people realize that they are not being recognized, they still expect to be known-- and happily say their name, expecting that to be all that's needed for me to know all about them, and what avenues of our lives we share. So it's Hi Claire! ............. I'm Linda!!! which means very little more to me than the face, and by then I'm assessing the venue, their clothing, their voice for help..... I'm hoping for some kind of memory prompt, some hope of a trigger to their identity which will help me to react appropriately to them. Your images do show the emptiness of missing friendly companionship with many people, and show how left out of that friendly world I feel now.

' bland'... shows the changing expressions which we have to try and read and appreciate quickly and properly to ascertain their reaction upon our encounter together. Facial expressions arrive in a flood and appreciating their meaning is a challenge in itself-- all of them are expecting a particular reaction from me and it feels a real challenge to react appropriately to everyone at any moment. I need to know many important things; do they know me? are they my family? friends? a friendly person I meet often and chat to about the price of sprouts? am I in their way? am I looking at someone whose never seen me before and whose wondering why I'm looking at them? is it a mirror!! So many messages need to be appreciated so quickly in order even to pass as normal in everyday life.
'wobbly' - these images do show the ever changing facial expressions and body language which we need to gather quickly in order to respond appropriately to others. They have no markers for recognition by their faces, and this does exhibit well how much we need to use other information to appreciate their identity and understand about our relationship with them, and how we should react, behave, in the right way, now, this minute.

I do hope these thoughts will help you, I can’t emphasize how much facial expressions and body language are fundamental to the way that we communicate with each other, they are very indicative of our feelings for and about each other whether we recognise and know a person or otherwise. People generally behave appropriately to each other without having to make conscious decisions about who somebody is and the correct way to interact with them. Loosing this ability becomes very stressful socially. Many thoughts are read into our behaviour and whether they are appreciated and understood either rightly or wrongly makes a significant difference to our ability to socialise correctly.

Socialize Correctly? This is a very important issue -- no-one wants to ignore or not seem to care about meeting up with their family and friends, nor do they want to happily greet and hug the wrong person at the railway station. I used to know which boy to watch for at the football match, which ones were mine at the swimming pool, which person I was sitting with when out having a coffee! I don't see anything meaningful in their face initially and need to rely on their behavior, their facial expressions, eye contact, body language and general demeanor to help me feel confident to know their identity. They usually think that once I seem to know them, that at our next interaction only seconds later that I'd still know them and they expect me to behave as such. I manage a lot better 1:1 with other people but when others are around just keeping confident of that one person's identity from one moment to the next is very stressful. When there are uniforms worn, it is hopeless, and the visual impact of these just take over any hopes of maintaining identity appreciation. I regularly rely on specific items of clothing to help me maintain the security of somebody's identity. My husband wears a sharks tooth necklace which I need to see to know it's him. In situations where people have name badges, these make all the difference to my hopes of reacting and interacting in the right way to the right people.

My family and friends who know and understand do look out for me and use various ways to indicate and reassure me who they are. It's the nodding and grinning with wide eye contact which says it all-- It's ok, I know you, I like you, I'm happy to be here with you, don't worry any more, I know you're not sure who I am but I'll remind you--- then comes their
whispered name and a big hug! It's very comforting to be reassured that this person knows that I know them, and that I like them, and that they understand my confusion and uncertain reaction to them.

It's that strength of eye contact and associated body language which I need at the moment of meeting somebody to appreciate whether they're thinking- "you're my mum"  "I'm your husband"  "I'm a close friend who knows your difficulties" or maybe-- "I've seen you around in the village but aren't sure who you are" or----- "what are you looking at me for? " or--- "you're in my way!!"

There are facial expressions and body language commonly associated with identity recognition and chosen appropriate behavior which is expected. Upon eye contact I need to think quickly to decide-- does this person know me?  do they know me well?  are they just being friendly cos it's sunny?  are they watching me because I'm looking anxious or behaving unusually in that situation?  are they just nice people or nosey?  Do they know more about my life than I do now?

There are so many nuances of behavior which say so many things, and these alter very quickly depending on the response from others so that the whole episode of being out amongst people is very difficult to feel confidence to manage appropriately most of the time.

It's that special nod, eye contact and grin that lets me know that it's my son whose won the sack race or just scored that goal-- he gives me that confirmation that it's him, knowing how much I want to know. My children help me a huge amount at home too, as well as when we are out and about, and I rely very much on their understanding and messages when they have friends around, they regularly have to notice me looking around at many faces in the hopes that one of them will say "ok mum?"

I rely very much on my family and friends to help me when I'm out and about with them, and when I'm out alone it's a very different matter to feel socially confident, but thankfully I don't get hugged by everybody in Sainsbury's!

5th Dec 2011
Hello Claire

Thanks so much for your thoughtful and considered response to the clips I sent out. I'm really pleased that you've been able to access and watch them OK. Would you be interested in drawing your own impression of what you see when you look at faces? I
would love to see your drawings of you felt able to do some? Don't worry if not, I appreciate all the time you have spent in giving me such generous notes.

The feedback on the clips was very helpful, it was interesting to me that each of the clips was resonant to some extent in different situations, which I wasn't expecting. You communicate brilliantly the experience of having prosopagnosia, my challenge is to try and translate that into a visual representation! I liked the information you gave me about reading the nuances of social interaction, I will try and incorporate that into my next clips. I have some more ideas about ways to present prosopagnosia, but if you have any input about specific ways to present visuals I would be delighted to hear them.

... 
take care and thanks so much again for the thoughtful feedback
Sam

8th December 2011
Hi Sam,
...
I will give it a go to do some drawings of how I see faces for you-------- when I get a minute!
...
Speak soon, Claire x

8th December 2011
Hi Sam,
Glad that you are seeing the way through the trees to the finished work :) Changing the appearance slightly from each angle would be interesting. I think that's probably the best way to explain it to other people. If you remember, I said that I can recognise a photo of a person if I've seen the photo before, and I think that if I've seen a person from a lot of different angles, I can recognise them better. I wonder if it's a case of linking their face to a 2D image rather than a 3D shape that makes it easier. If I had the time, I would consider getting a few similar looking people and having them move around while talking, matching the same motion to each person, and then replacing individual features with a morph effect ad hoc, so that they appear different from each angle. Hope that makes sense - I think it's probably the best explanation I can give.
Must Dash, duty calls - Thanks again!
Andrew

4th January 2012
Hi Andrew

Thanks for your response and I hope that you had a happy christmas and an appropriately celebratory new year!

Yes, the changing the angle thing would be a good idea - I shall try and tackle that next and send you the results to see if I have the right idea. I think I know what you mean about the 2D v. 3D - like you can memorise the pattern of the face when it's flattened out on a photo, but when it's moving in real time in a 3D environment you can't make the connections with the memorised 2D pattern quickly enough?

Any thoughts about doing some drawings yourself about how you perceive faces? You don't have to do it at all but I thought it may be helpful in explaining. See how it goes, I know you're very busy.

How is the PhD going? Sounds like you've hit the ground running - all that pent-up PhD energy clearly has found an outlet! I'm so pleased that you've taken this opportunity, it seems like a good one.

take care and speak soon, if you want to meet for coffee in Wolves (I'm in on Tuesdays from Feb) then it would be lovely to catch up in person.

best wishes
Sam xx

9th January 2012
That would be great, and yes, that's exactly what I mean :) I'll have a go, but as I said, I don't know how it'll actually work because I can't see the effect myself. It's sort of like asking someone who's tone deaf to hum a tune they just heard :)}
The PhD. going swimmingly - hopefully I'll be travelling a lot this year, which will be nice. I'm loving every minute of it, and learning new things every day. I hope you're having as much fun in your own studies. Who knew work could be enjoyable?!
That would be lovely - I'll be in touch after the end of the month to arrange something :)

Have Fun!
Andrew

23rd January 2012
Very interesting! If only I had the time... :) How are you getting on? I appear to have become involved in conference organization and teaching. I'm not sure what happened there, it may have been the academic equivalent of a drive-by shooting.

:D
Andrew

2nd March 2012
Hi Sam,

All is well here - just had my photographs accepted for a competition, and have several other things nicely on the boil :) We really should have a coffee sometime and catch up!
The video hasn't finished uploading yet, but I look forward to watching it as soon as it has. I've made a zip with some old sketches - The afp.jpg one is projection copied from a photo, which is why it looks cleaner ;) Most are people, but there are a few animals in there too. The files are all in this zip:
https://docs.google.com/open?id=0B2PAcoqabe80enBIRjZXN2ISUS1JT2FGeVRxcGRaQQ

Let me know what you think.
Andrew

2nd March 2012
Hi Andrew
Hey, how are you doing? I've been busy working on various projects, trying to keep some kind of work/life balance (not always successfully!).

OK, so I've done the face changing between movement thing we discussed and posted it on Vimeo here https://vimeo.com/37797826 The password is "changer" It's not exactly 2D v. 3D, more changing between angles but see if it's starting to get there. If you have any of your drawings of faces I would love to see them, not nec. done specially for this project but I know you do a lot of art anyway.

Take care and I hope to hear from you soon
Sam

2nd March 2012
Hi Sam.

I really love the animation! The only suggestion I have is that the face shape doesn't tend to change for me, just the features (if that makes sense). Think original Lon Chaney wolf-man transformation, or Mr. Potatohead - 1 potato, 1000 faces:D

Andrew

2nd March 2012
Yes, that makes sense, I guess I was trying to emphasise the differentness of each face. I shall go back and standardise the face shape, and let you know when it's done.

Thanks so much for the drawings, they're really helpful. Ooo, exciting, I want to get animating sections of them!

speak soon
Sam

7th March 2012
Hey Andy
The newer version with same face shape is up here https://vimeo.com/38088460 password 'round', see what you think?
Xx

7th March 2012
Fabulous! That's the ticket:)

19th April 2012
Hi Andy

I was having a chat with my supervisor about your lovely drawings and she suggested you could actually do a drawing (in something like ArtRage?) where the process of drawing would actually be recorded. I thought this would be rather cool, to see if the way you approach the face would be any different than, say, mine. Would you be up for that? It would be super fascinating to see and hopefully not too onerous? Let me know what you think. I have a copy of ArtRage BTW, and although I'm sure you are well able to furnish yourself with something along those lines yourself, let me know if you'd like it.

best wishes and hope all is well with you
Sam

19th April 2012
Hi Sam :)
I'm willing to do it for science, if you don't mind watching what will be the artistic equivalent of a slow motion train wreck Seriously, I've not drawn anything for _ages_. It'll be terrible... Think along the lines of a jet filled with puppies and kittens crashing into an orphanage on Christmas eve. Then multiply it by Simon Cowell singing along to Lady Gaga, naked, in the shower cubicle of a pay-by-the-hour St. Petersburg youth hostel.

Hope you're getting on well,
Andrew

19th April 2012
You really know how to sell an idea.... if you are genuinely up for it (puppies and Cowell notwithstanding) then I’d be delighted to see it...!

speak soon
Sam x

19th April 2012
Hi Claire

Happy easter! I hope you had a good easter break and your house wasn't too sugar-high-excitable!

I wondered how you were getting on with the idea of drawing some faces? It's fine if you don't feel comfortable doing it (another person that I am working with described it as trying to sing a tune when you're tone-deaf) but if you could it would be very helpful. In the meantime here is a clip I did for Andy (who has developmental prosopagnosia), describing the way in which faces change for him whilst he is watching them. It may not have any resonance for you but I would be interested to know if it does. The link is here https://vimeo.com/38088460 with the password 'round'.

best wishes and speak soon
Sam

20th April 2012

Dear David,
I don't know if you got my e-mail about the progress of this project but I thought it might be easier for your to look at a DVD anyway and then perhaps you can let me know (via e-mail or by post, it's up to you) what you think.
I am including several different clips on the DVD as well as an edit of some of the talk we had together with the imagery already made (just to have a picture to go with it, we can change any of it). See if you think that the way I've edited the sound is a good representation of your experience. You may notice that there isn't a lot of reference to your illness and recovery in the interview, just the prosopagnosia part of it. That is because
I am working with people who have all had prosopagnosia for different reasons, and I want to just focus on that aspect of your neurological experience.
This is all work in progress, so what I’d like from you is some idea of how resonant, or 'true' to your experience you find each of the clips. Do any of them represent the way you see the world? Can you think of a better way that I can do it? It may be that none of them strike a chord with you, in which case please let me know. I know that this is a really hard task – one of the other interviewees has described it as asking a tone-deaf person to whistle a tune!

Don't worry about being too critical or fussy as the more details you can give me about your experience the better. If you’d prefer to tell me over the phone I can arrange a time to call you. If you have any questions then I’d be delighted to answer them.

Finally I wonder if you would ever consider doing some drawing of faces for me, to show me the way you look at people. I have been doing this with some of the other interviewees and it's a very interesting process!

I do hope that you're well and that you are enjoying your retirement.

Best wishes,

Sam

2nd May 2012
Hi Samantha

I don't seem to be able to look at your disc either on my DVD player or my Laptop probably my lack of it skills but I trust what you would have done & so go ahead & I will get someone to do it for me

I have done another TV show with Ash on C4 22nd of May 21-00 hidden talents if your interested

Regards

David

11th May 2012

Hi David
I'm sending you a new DVD, this one will play automatically when you put it into your DVD player. The first thing to play is a rough edit of you talking with some of the test animations that I have done. What would be really useful for me would be for you to let me know which of the animated clips (the faceless black line drawings, the blonde woman with the wobbly face, the faces which change as they move or the man with a face that disintegrates) is the most like your experience, and also what you think of the sound track of you speaking - is it a good representation of your experience?

It is important to make it clear that you don't have to choose a 'right' animation style out of those shown, this is just a starting point for our discussion about the way in which you see faces. This is a process of collaboration with you and any feedback you have will be helpful. You can't be too fussy or too specific! Once the first round of feedback is in I will be able to make changes, scrap ideas or generate new ones, and this back and forth conversation will happen (slowly) over time, directed and contributed to by you. If you can think of a way to better represent how you see faces then I'd love to hear it, and if you could do some drawings then I would be really interested to see them.

After the first film has played there will be a menu and you can click on the individual clips by clicking on the yellow boxes next to the clip titles.

Hope that this is helpful, see what you make of the new DVD!

best wishes

Sam

25th May 2012

Hi Samantha

I have looked at the DVD & think you have got it wright albeit you have dissalisioned me about my theory I looked like Brad pitt

so good luck with it & if you need me contact me

I wasa cut out of hidden talents with Ash they said they tried hard but couldn't find any

Regards
Samantha Moore

Out of Sight: Using animation to document perceptual brain states

David

6th June 2012

Dear Andrew, Claire and David

Here is my latest animation trying to represent the way in which someone with prosopagnosia might see a face - in individual boxes which are all perceived separately but defying a whole recognisable pattern. The link is here: http://vimeo.com/43562554 and the password is 'box-face'.

I'd really appreciate any feedback you have about this representation - does it have any resonance for you? I have some more clips in this style but I'd love some idea first whether I am heading down the right track. Any comments, however brief would be really helpful.

best wishes and I hope that you are all well
Sam

7th June 2012

Hi there

After a conversation with Andy the other day he mentioned that he had no problem identifying the 'Thatcher illusion' face, and I wondered if this reaction is a common one amongst people with prosopagnosia. Would you mind taking a quick look at the attached image and let me know which face strikes you as wrong, and how long it took you (approximately) to identify it? If you do see the difference straight away it's a really interesting side effect of not seeing faces as patterns, but as individual features.

Thanks for your help, sorry about the multiple e-mails; I'm putting together a series of talks for the Royal Institute of Australia, the Melbourne International Animation Festival and the Society of Animation Studies conference in Australia in a couple of weeks about our work together.
Hi Sam,

The one on the right is wrong, it took about one second to spot it.

Andrew

Amazing. Thanks Andy! Did you get a chance to look at the clip yet? I know you're busy, so any time - ideally in the next week - for feedback would be great.

thanks again
Sam

This is good :) I think it explains really well, with the face being visibly divided into different features. How often were the features changing? I couldn't really see more than 2 changes, but I think that might be my brain being silly :/
The only thing I'm not sure about the rotating features. If I actually saw that, it would freak me out completely unless I'd been experimenting with the chemistry set. Maybe a direct flip flop rather than an obvious rotation would look more natural?

Thanks!
Andrew

7th June 2012
The right one the mouth & eyes are upside down
David

7th June 2012

Thanks David, brilliant! Was that quick to spot?

I don't know how you've got on with the online video clip, I can send you a direct link if it'll help?

Hope you're well, speak soon
Sam

8th June 2012
Really helpful feedback, thanks Andy. the rotating eye has been bothering me too, I think I slightly conflated the upside down faces with the changing faces and made something that looked aesthetically pleasing but doesn't make prosopagnosic sense.

My bad, and I've now changed the sequence to reflect your comments: https://vimeo.com/43664380 password 'boxface 2', see what you think.

best wishes
Sam

8th June 2012
Full of win ;)

Are you familiar with eigenfaces? It's a method of face recognition used by computers, and I think they tie in quite nicely with prosopagnosia - Eigenfaces are the (roughly) the average result of a set of faces that are aligned together. Individual faces are recognised by the deviation from the average face. I think in some ways that's a good way to explain prosopagnosia, because I see a face, but the bit that automatically calculates the recognition from the deviations doesn't work properly, and I have to make a conscious effort to match sets of features together.

Actually, I had a horrible experience at uni the other day, when two people waved at me from the other side of the road and called me over. I couldn't recognize them at all for quite a long time. It was the guy who works on the desk opposite me in the office, and one of the students who I'd just lent a laptop to. In the end, I only recognised them because the guy was very tall, and the student was american. I don't usually have it happen that badly, but I felt really awkward about it at first. I had a migraine coming on, and I think that must make it worse. I also bumped into two girls who were really pleased to see me - but I didn't know them until they spoke either. In that case they were both wearing sunglasses, and I've mentioned before that I pay particular attention to eyes when I'm trying to recognise someone. They were dressed for a presentation, too, so I couldn't even use their clothes or makeup as reference because I'd never seen those clothes before and they'd changed their makeup style for the presentation. I felt really awful that afternoon, and actually went and apologised to one of them, because I'd been so confused that I more or less run away from them.

Cheers,
Andrew

P.S. - a nice gentle intro on eigenfaces:
8th June 2012
Oh no, you poor thing, sounds like a horrible day. It is a wrench for a non-prosopagnosic person sometimes to see a person out of context, and if you have prosopagnosia it must be a hundred times worse. The incipient migraine sounds like it made it worse.

Thanks for the eigenfaces link, that's really interesting. I'm planning to do some more animation with more changes in the face so I'll send you the link when it's a bit more developed. Could take a while, I'm off to Australia next week and I haven't written the paper I'm meant to be giving yet. My PhD is going fine but I'm worried that with all my practice I've been letting my reading slide for the last few months. Must take some books for the plane journey and perhaps I can catch up! Hope yours is going well, and say hi to Eugene from me :-(

Take care and THANKS so much for your generous feedback
Sam

12th June 2012

Dear Sam, I hope you are well and happy. I'm sorry it's taken me so long to reply to your e-mails, and I've found 3 dating back to April! Sorry! Family life has rather taken over any time I want to call my own, and even when I do snatch a second, there's loud music, TV too loud, crashing about in the kitchen, arguments or drumming happening all around me, it's like student digs here!
I'm up early, got the chance now, so here goes---

Your e-mail in April about the way faces change when we are watching them is interesting, and I found the clip which you did for Andy very good with the shadowing being particularly useful to try and understand the persons mood by their facial expressions. The facial features I found unreal and actually rather creepy. The shadowing particularly reminded me of my own attempts to draw some faces, when I came to realize just how important each tiny line is to the reality of the picture characterizing an actual face, belonging to a person, with the thoughts and feelings that that person is having during that split second. Each contact with the pencil to paper says so many things! And I so want them to say the
right things that I have been rather upset by my attempts at times, but also very pleased at other ones. I’m going to keep giving it a go.

Your e-mail on 6th June regarding the box face gave me a real certainty very early on, that it’s the eyes that matter most. The other parts of the box face were meaningless to me, and their jiggling about was easy to cancel from my need to understand them, I could realize that I wasn’t going to gain any information from them, so best not to upset myself by trying. But the eyes I had to try and follow, to try to understand what they were saying to me. The appearance of the face turning inside out was rather disconcerting but the eyes told me not to worry and looked bright and happy again very soon afterwards which felt good.

7th June -- which face strikes me as wrong? not easy, I initially tried to ascertain if the features matched and quickly felt that they all did, and that I must be missing something profound as I was being asked to assess it, actually having been told that there IS a difference. I kept checking everything over again all the separate features, until after about 3 minutes I decided that maybe the eyes are upside down in the picture on the right hand side. The eyes were interesting but this was the only way I think to explain the difference I think.

It all went back to the eyes again!

I hope these notes are ok for you,--- sorry so late, oh, and what’s the Thatcher illusion face?

Must go, speak soon, kind regards, Claire x

8th February 2013

Hello there,

I hope that you are all well, and that spring will arrive in your part of the world soon! I am e-mailing because in the next few days I shall be popping a DVD in the post to you. It contains a compressed history of our talks, e-mails and animation (total running time: around 20 mins).
I would very much like you to have a look at it when you have time, and give me any feedback about the contents. I would like to make sure that everything I have included is a fair representation of what we discussed and any feedback on how helpful you find the animation in describing your prosopagnosic experience would be great. I am nearing the end of my PhD now and am wrapping up this part of the project.

Working with you has been a great experience, and I would like to continue with the work once my PhD is over. I am planning to apply for funding from the Wellcome Trust in late 2013/early 2014 to make this into a 'proper' animated film, which would be screened in cinemas at festivals around the world. I would love you to be involved with this, so if you would like to be part of that please let me know. It would be more of the same (interviews, e-mailing etc) but very slightly quicker, since I shan’t have to do my written PhD alongside it!

Best wishes to all of you and huge thank-you’s for all your involvement so far, it’s been invaluable and you have all been very generous and kind with your time, and thoughtful responses to my questions.

best wishes

Sam

8th February 2013

Look forward to seeing DVD & if I can be of any help let me know

Regards

David B

8th February 2013

Thanks David!

best wishes

Sam xx

16th February 2013
Hi Sam
Just watched your DVD & found it interesting to hear people with similar strategies as me were they acquired Prosopagnosia like me or born with it as I often wonder which is worse, not ever being able to recognise or being thrown into it at 56, both are a problem
Found it difficult to follow the face changing as it was a bit to quick for me but my wife found it ok got the inverted mouths & eyes pretty quick but have done many test on these over the years
Thanks for sending DVD & if you need any help contact me

All the best with your PhD
Regards
David

22nd February 2013

Hi David

Thanks so much for your comments about the DVD I sent you, it's really good & very helpful to hear your feedback. I thought your comment about your wife getting the face changing more quickly was very telling, I suppose that ultimately the point of the animation is to show a non-prosopagnosic person what it is like to have a form of prosopagnosia, so I'm glad you showed her and she got it! I'm sure that you did get the upside down face very easily - partly because you've done loads of them (so you know what to look for) but also because of the unique way that your brain processes faces (i.e. in sections or chunks rather than in patterns).

I thought it might be interesting for you to see and hear the reactions, comments and experiences of the other people I've been working with on this project as - as you point out - there are some similarities and some marked differences.

This project has been very hard to work on but perhaps *because of* the difficulties in expressing visually something which is so tricky to convey to a non-prosopagnosic audience, I've found it incredibly fulfilling and interesting.
I'll keep you informed about the progress of a potential future film. There are no guarantees that I'd get the funding of course but I shall try my hardest!

Take care and thanks so much again, I shall be in touch again before the summer if I have any other questions if that's OK but if not then in the autumn to talk about the Wellcome Trust bid. I'd love it if you were involved, you speak so fluently and articulately about the experience.

best wishes
Sam xx

17th February 2013

Dear Sam, about the daffodils!! My brain damage has completely stopped my sense of smell, which can be a bit disappointing at times, but the best thing is that I can still see them, and I can see my family, my friends and even though I can't recognize them, I do value how much luckier in life I am than everyone who is blind. And I've got kids to rely on when I forget to light the gas on the hob! (they are useful for some things in life, also for telling me if one of the cats has been sick somewhere!)

Enough of that, yes, the daffodils are just starting to sprout and I have seen some pansy's trying to beat them to it! Lovely, spring has definitely sprung and I can see all the lovely people out walking their dogs and smile and wave whether we know each other or not. Vision has real value and although we have prosopagnosia, we live in a world where we can socialize happily using speech and body language to understand each other, can't we?

And it enabled me to see your DVD! and I heard it, which had great value too.

Starting with the recorded bits;
I think your work is very meaningful, it says JUST what it's like for us and using our own recorded words makes it real, and shows just how individually we each manage to live with it, in differing ways. It shows how we use similar strategies to each other and that we are each coping in differing ways. Our individual feelings about eye-contact are quite interesting, but we all use the same strategies with clothing, jewelry and hairstyle it seems.

About the drawings;
Andrews are great, but I was interested to hear him say that he can't draw faces, at which point I thought to myself that I actually can, and this surprised me, but he has drawn some
very real faces I think. (I also think that maybe you asked me to draw some too but I
mustn't have sent them to you... sorry!)
I think that your animations say it all about prosopagnosia, they are all rather creepy,
nothing and nobody-at-home which is exactly how it feels. It's just a face, like somebody's
arm is their arm, their knees are their knees and none of it tells us anything about just who
they are. Identity, your work does show just how empty and lost we feel looking at faces
and I'm sure it will give others a good appreciation of what you are attempting to show
them about it. You are showing how we, like everyone else, are observing and assessing
unspoken messages from other people, but perhaps making them appreciate just how
naturally easy it is for them, without barely needing to think about all the myriad of
nuances which we are trying to read and appreciate every single moment in each social
encounter.
Your pictures moving quickly show the chaos of facial expressions changing too quickly for
us to try and read meaning from them, rather like trying to read a story is for us when we
don't remember anything of the characters in it, let alone what's happening!
Andrew and I both speak well of the social uncertainty at a supermarket, but the enormity
of this is that it happens everywhere, even at home, and all the time. We both speak
differently about this, and how we try to help ourselves to manage this frequent type of
encounter, which is interesting.
Your final clip makes me acknowledge the huge amount of mind reading which need to try
and do and Andrew's drawings are good for this, showing expressions with thoughts and
feelings, which I try to read the meanings of, but they move too fast for me to register and
assess each one fully, and the tattoo gave me a bit of the creeps!!
I think it would be more real without the rotating eye, and going slower would allow more
social inference to be exhibited.
I think you have made a really good piece of work and I hope you get top marks for
it! Well done. It feels well compiled to me, showing the general difficulties, but also an
array of differing feelings amongst a group of us, and our differing strategies to manage it,
and help ourselves which is nice. Thank-you for making it so real and meaningful, so often I
get told by other people who have no iota of appreciation -- "oh yes! I never remember
names either!"
The proposed film? It sounds interesting, please do let me know more, I'd probably be
happy to be part of it, and I could bring some name-labels too!
Bye for now, I hope this is useful enough for you, but please let me know if there's anything I have missed. Also, what is a Thatcher Illusion face, and what does 2D 3D mean?

Claire xx

22nd February 2013

Hi Claire

Thanks so much for your comments about the DVD I sent you, as always your feedback has been thoughtful, considered and very helpful.

I thought it might be interesting for you to see and hear the reactions, comments and experiences of the other people I've been working with on this project as - as you point out - there are some similarities and some marked differences.

This project has been very hard to work on but perhaps "because of" the difficulties in expressing visually something which is so tricky to convey to a non-prosopagnosic audience, I've found it incredibly fulfilling and interesting. I'll keep you informed about the progress of a potential future film, there are no guarantees that I'd get the funding of course but I shall try my hardest!

RE: your questions:

Sorry, you did ask me about the Thatcher illusion before - it was an experiment done in 1980 by Peter Thompson (http://www-users.york.ac.uk/~pt2/thatcher1980.pdf) who inverted Margaret Thatcher's face in two photos but in one of them he left her eyes and mouth the right way up. If you don't have problems recognising faces it's really hard to see which one is 'wrong', but when they're turned the right way up the photo which has been doctored looks grotesque (probably why he chose Thatcher I'd guess?!). If you DO have prosopagnosia then it's just as easy to spot the problem photo whichever way up it is - and there is speculation that this is to do with the way that someone with prosopagnosia looks at faces - in sections or chunks rather than being about to spot the pattern (which would allow you to recognise it as a particular person). On Wikipedia it says; "It has been hypothesised that we develop specific processes to differentiate between faces that rely as much on the configuration ...as the details of individual face features... When a face is upside down, the configural processing cannot take place, and so minor differences are more
difficult to detect." Which is interesting isn't it, because it implies that there are some elements to facial recognition that some one which has prosopagnosia is better at than someone without!

2D & 3D: 2D animation is drawn, or flat animation (like the Simpsons) whereas 3D is computer generated (like Toy Story) or stop motion model (like Wallace & Grommit). I make 2D animation although I do use some software that puts my 2D animation into a 3 dimensional environment (we call it 2 and a half D, just to confuse!!).

I don't think that daffodils have a very strong or nice smell, so you shan't be missing out! They're just a lovely splash of colour aren't they, to remind us that Spring is on her way. Ours aren't quite out yet, but the snowdrops and crocuses are here which is very heartening!

Take care and thanks so much again, I shall be in touch again before the summer if I have any other questions if that's OK but if not then in the autumn to talk about the Wellcome Trust bid.

best wishes

Sam xx
27 March 2013

Hi Sam,

I finally got chance to look at the DVD - It's truly great. It was good for me to be able to see and hear other people's experiences, and it made me realize that there are other people out there just as confused as I am. It was actually a relief to know that there's a name for what's 'wrong' with me. There's nothing that I'd like to see changed at all, it's perfect. Thanks so much for taking the time to put this together, I'd love to see it expanded to a full animated piece, and would love to help out when the time comes. Maybe I'd even have time to do some animation myself, if that's something you'd be interested in.

Once again, thanks!

Andrew

29th April 2013

Eeek, I didn't reply to this, sorry. Went away on holiday and then life things took over. Sorry. And thank you! I'm so glad you liked it and I'm really pleased that you felt it expressed something for you. I'd definitely love you to do some animation, even keyframing would be fab, thanks, I'll be in touch about that closer to the time (the deadline for the application is November).

... take care and bon chance with your PhD, I'm writing up at the moment and it's VERY PAINFUL.

Sam xx
Questionnaire for film makers - Tim Webb, Ellie Land & Sophie B Raymond

21st March 2013

Hello there

I am writing to you as fellow animated documentary makers because we share (I think) a similar methodology in our film making, using a collaborative approach in greater and lesser degrees in the way we make films.

This year I am finishing my PhD study about animated documentary and one of the things that has come up quite prominently in my research is the methodology I use to make work, defining a triangle of practice between the filmmaker, interviewee and audience (with the film in the middle). I'm trying to develop a methodological framework that I can draw conclusions from, and because you and I share some similarities in approach it would be very helpful if you could complete this questionnaire (attached) which I can then use in my written work.

If any of the questions don't make sense to you or if you want to discuss any of this please call/e-mail/text or skype me (details below and on the doc). If you need it in a different file format then do let me know. If you'd rather do your response verbally I can arrange it via Skype or phone. If we do it verbally I will send you the transcript of your answers once we have finished and whichever way we do it I will send it to you in context so you can see how I am using the material.

If you don't have time to do it then no hard feelings! There isn't a formal deadline but in the next month or so would be great.

Thanks so much for this and hope that you're all well
warmest regards
Sam xx
This questionnaire is to include some wider information about contemporary animated documentary work to include in my PhD by practice dissertation. There are no correct answers to any of the questions, and there isn’t a perfect practice methodology, I’m just very interested in the way that your practice maps onto some ideas generated by my research into collaborative ethnography, which is steering the questions.

If you feel that you don’t have "an answer" per se, that’s fine, but perhaps you could talk around the issue raised and tell me what you think about the question and how it relates (or doesn’t) to your work.

Please answer as fully as you can. If you’d rather do your response verbally just let me know and I can arrange it via Skype or phone.

If we do it verbally I will send you the transcript of your answers once you have submitted it and whichever way we do it I will send it to you in context so you can see how I am using the material.

1. What do you think your responsibility is to the people you are representing on the screen through animation?

2. Could you describe the ways in which you collected information for your film?

3. How accessible were the pre-production / production and post production processes to the people you were making films about/with, and how much dialogue was there with the interviewees during each of these stages?

4. How much collaborative practical work did you do with the interviewees? Can you describe the kind of work this was (drawing, discussion, writing etc.)?

5. What audience(s) are you creating for? For example, is your film targeted at health professionals, academia, the science community, children, as well as (or instead of) a more general audience?
6. Was there a point in production when you took authorship of the film back and took the lead on the final film?

Any other comments?

Thanks so much for doing this. I know that getting asked questions like this can be laborious and time consuming so I really appreciate you taking the time to do it.

Sam
21st March 2013

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Sophie B Raymond

1. What do you think your responsibility is to the people you are representing on the screen through animation?
I think authenticity is a good guiding principle. You can be creative with representation and context etc if you don't change the integrity of the person and their viewpoints.

2. Could you describe the ways in which you collected information for your film?
I've really scoured broadly. From using interviews other people have used, to doing my own, even considering using archival audio. I've researched at Conferences, talks, online, books, academic articles, film festivals… everywhere. Pintrest is proving a good resource to collate visual ideas.

3. How accessible were the pre-production / production and post production processes to the people you were making films about/with, and how much dialogue was there with the interviewees during each of these stages?
Having just experienced doing a straight documentary feature I'd pretty much use a similar method of being very transparent but insisting on final editorial control. You need to be open to peoples concerns and know when to take them on board and when to gently hold your ground. With Interviews with the ever on going Dog project "The Nature of things" I've actually taken a approach of including some of my academic types into the process. I'm re framing their ideas to be coming from a dogs so it was necessary for me to have them NOT use the words, "we" and "us" when referring to human behaviour and so I had to brief them on that, and give them time to find their wording or allow me to interrupt. Some have gone too far and actually started referring to themselves as a dog!! Had to advise against that too. When talking to people who are dog practitioners however I’ve not been so strict, mainly because they feel such an affinity with dogs they don’t really think of themselves as like other humans when it comes to dogs.

4. How much collaborative practical work did you do with the interviewees? Can you describe the kind of work this was (drawing, discussion, writing etc.)?
With "It's like that" we had pre recorded radio interviews and the transcript so we had no contact with the actual interviewees til well after the film was made. With "The Nature of things" apart from the above I’ve also read out some of the ideas from my other...
interviewees and asked them to comment on them. In my most recent follow up interview I showed Ellen some pictures of dogs with crazy fur designs and asked her to comment on them. So in a way building on the above I see the "dogification" of some of peoples thoughts is collaborative. I expect to do more of this and I guess…. Give more direction as the vision for the film/s comes clearer to me. I started out completely learning as I went….which I still do but I'm a more well read and researched now which really helps for obtaining a conversational tone. I do let people bring things to the table I'd not thought about and we explore those ideas too. Though the temptation to just have good old yarn I have to subdue.

5. What audience(s) are you creating for? For example, is your film targeted at health professionals, academia, the science community, children, as well as (or instead of) a more general audience?

"It's like that" was created to cut through the politics of refugees and border security and to allow audiences to hear the refuges speak for them selves. We wanted to remove the prejudice people experience when even seeing a drawn figure of a human. So we used the knitted caged birds and progressive revelation to draw the audience in. As a result I guess we were pitching it to a very broad audience. We wanted to make their story that had been politicized and marginalised as accessible as possible. This is the foundation of my approach with "The Nature of Things" too. Using dogs to break down barriers of suspicion people have of other people and present amazing understandings to people who would normally not pick up a science book or download a TED talk, in an entertaining way. It's kind of subversive really….wrapping up seminal understandings of human nature in a good ole dog story.

6. Was there a point in production when you took authorship of the film back and took the lead on the final film?

Ummm…. Still working "The Nature of Things" so… dunno. Am still opening it to collaboration. "It's like that" was a straight ahead collaborative effort so no one person called the shots. There was always at least three people overseeing each stage of the production.

Any other comments?
Feel free to call/skyp and ask more questions. Happy too.
Tim Webb

1. What do you think your responsibility is to the people you are representing on the screen through animation?

To be responsible in how I portray the people. In some instances this is dependant on who the people are and what you want your film to say. It animation and it involves editing so it can only be a reflective view on the world. Being responsible could be to manipulate and expose and be biased if your subject/people were of objectionable views?

2. Could you describe the ways in which you collected information for your film?

I read a few books – Lorna Self springs to mind. Then contacted organizations involved in the subject like NAS (National Autistic Society) (who were no help as I remember though I did visit numerous NAS centres and schools around the contry) Telephone contacts Child Psychologists – most of my contacts came through Elisabeth Newson. I contacted Temple Grandin through seeing Rain Man (I think) and she also had a book so I’d an idea of what passages I wanted to use. Also Dick would have helped and come up with new ideas and contacts. I kept collecting till I got a bad response to the idea. Also Dick was having kittens as he wanted me to start the production. (fear of starting)

3. How accessible were the pre-production / production and post production processes to the people you were making films about/with, and how much dialogue was there with the interviewees during each of these stages?

I sent storyboards to professional involved, but it was not about them or turned out not to include their comments – this idea to not include any other comments bar the voice of the autistic came from Dr Neil O'Conner, and when he said it I knew it was a good idea. I can not remember if we showed the storyboard to the contributors- possibly not as my research/pre-production was part of finding material to make a storyboard. I showed Daniel animation linetests as we went along. But the editing was made without consultation with contributors.
4. How much collaborative practical work did you do with the interviewees? Can you describe the kind of work this was (drawing, discussion, writing etc.)?

I went to schools in London to take classes in self-portraiture for the opening comparison sequence ie normal compared to autistic. There was no real interviews except one with Elisabeth Newson's son who is autistic – His is the voice over the playground sequence – grey coloured characters( not his drawings) One person read someone else's piece of writing. Temple Grandin read her own quotes (recorded and sent to me herself- ive never met her). I think Errol Morris has made a film about her?

I gave Daniel a lightbox and showed him how to animate and he was a natural. I went up there about 9 times ( maybe more – cant remember)Most of the animation was done in his home except one sequence where we went out for the day to a railway siding in Worksop- his choice

5. What audience(s) are you creating for? For example, is your film targeted at health professionals, academia, the science community, children, as well as (or instead of) a more general audience?

General TV viewing public – though the film is in many libraries and used by some speech therapists (not sure why-it maybe only one) and recommended by the NAS depite their initial reservation to the idea.

6. Was there a point in production when you took authorship of the film back and took the lead on the final film?

As it was a TV production with a deadline for transmition the film was never truly collaborative- in terms of editing and ideas- some of the ideas were at the start- some of the structure was there as well – but things and ideas changed throughout production and new ideas emerged in the editing. The film was based around a series of quotes which tried to explain the condition- and the film aimed to reiterate the quotes – without being too literal and illustrative.
Any other comments?
You owe me a pint.
Best Tim
Ellie Land

1. What do you think your responsibility is to the people you are representing on the screen through animation?

Responsibility to the participants in my film Centrefold became about the ethics of representation, especially because the funders put a clause in our contract, which asked us to employ an ethical advisor! This was actually a good thing, because it forced me, in collaboration with the advisor, to create a framework of ethical Guidelines to work against. These included guidelines for recruiting participants as well. This is mostly because of the sensitive subject matter. For example one woman really wanted to talk to me and take part in the film, but it turned out she was traumatized by her recent surgery and really was looking for a shoulder to cry on. Therefore it would have been unethical of me to include her in the film due to her reasons for taking part.

So the ethical responsibilities towards the participants became part of the creative process, through the selection of participants, but also when it came to representing people’s stories. Here I felt a responsibility to stay true to the women’s stories. In reality the women’s perspectives on their surgery were mostly positive and this became problematic for one of the aims of the film which was to create a balanced ‘viewpoint’, but as a film maker and ‘representor’ of the women I wanted their story and its essence to play out in the film. In the end – to readdress the balance in viewpoint, I chose to focus on another part of one woman’s, her upset in her surgery not looking how she imagined, to illustrate the negative consequences of surgery.

2. Could you describe the ways in which you collected information for your film?

I read an extensive amount of academic literature on the subject of labia surgery. Actually I really enjoyed reading medical journals. I watched all the documentaries I could find on the subject. I read feminist writers such as Susie Orbach, who talked a lot about the beauty industry and consumer cultures impact on women’s body perception. I looked at other artists working with the image of female genitals. I interviewed women and also plastic
surgeons. I also sifted through the plethora of online material – from help pages to labia plasty product pages. I also was able to witness the surgery being performed.

3. How accessible were the pre-production / production and post production processes to the people you were making films about/with, and how much dialogue was there with the interviewees during each of these stages?

There wasn’t much dialogue about the stages of production in this film. I did however explain the process and how their contribution would be used. This was done through conversation and an information sheet. I made sure that they were aware of exactly how far I wanted to screen the film. What I didn’t prepare them for was the way in which people received the film and the types of comments that were posted on the film website – sometimes negative towards the women’s decisions to have surgery. This was because I didn’t realize this would happen! I didn’t think that the film would be that controversial! But it’s a lesson learned. I also think that these comments exist more online, than they do in reality – i.e. at film festival screenings the types of comment are very different. So perhaps the anonymity associated with online comment making enables people to be braver in their remarks.

Other projects do involve participants at all stages. The project I am currently working on, whilst animated by recent graduates, is designed and directed by a group of adults in Leeds. They have been made aware of and are engaged in every part of the process – particularly in giving feedback at stages – such as the design and animatic stage, as they are steering the project. The reason why they are not animating is to do with budgetry restraints.

4. How much collaborative practical work did you do with the interviewees? Can you describe the kind of work this was (drawing, discussion, writing etc.)?

There was discussion for the Centrefold project – so the collaboration is more about how the interviews are collected.

5. What audience(s) are you creating for? For example, is your film targeted at health professionals, academia, the science community, children, as well as (or instead of) a more general audience?
For Centrefold the main audience was adults and female, but this extended to academia, medical and policy makers. It's an interesting time when your film is 'out there' and how it finds its audience.

6. Was there a point in production when you took authorship of the film back and took the lead on the final film?

Centrefold was almost entirely led by me, apart from the interviews – where the authorship is fluid between the participants and myself. Other projects, which are more participatory focused, I tend to try and not take authorship – but often I need to in the edit – to ensure a film communicates in the same way. It depends on time and budget and the type of project I am engaged with. For example for a project I was making in Uganda, I only had 4 days in the field with the young people who were making the film. We only animated 2 and a half minutes of the projected 5 minutes needed. So when back in the UK I took back authorship in directing the sound and postproduction of the film, whilst another animator continued to finish the animation off. However the second animator was directed by the youth in Uganda, her work shown to the group and feedback sent back via a social worker on skype – and also before the film could be finished and signed off the youth in Uganda would watch an edit and feedback. I call this film part participatory.

Another point to consider in participatory work is that increasingly I am working in a participatory setting but there is a demand by the commissioner that the final project is of quality and has a wow factor. This is an added pressure to participatory work and often the time and budgets do not reflect the need of the commissioner.
Examples of writing:


"Does this look right?" Working inside the collaborative frame

Abstract:
In my animated documentary practice the collaborative nature of what goes on inside the frame and how to develop a methodology for that collaboration is something which increasingly interests me. The issue raised by this paper is the extent to which the frame within an animated documentary can become a collaborative space, working with the interviewees to create the image, and how one might go about creating and sustaining that collaboration. There are a combination of motivating factors for making the frame a collaborative space. The integrity of the image to claim documentary status and its relationship to indexicality is one. The authenticity of the (particularly internal) experience translated into visuals is also key. The relationship between subject and film maker is another element. This paper will look at what a collaboration inside the frame is, why it would be attempted and what impact that might have for audience, film maker and subject using key examples from my own and other’s practice. I will also look at how a methodology of collaborative working might be developed and how that could be applied to practice. I do not claim this collaborative approach as peculiar to animated documentary as such, but I do think that there are representational issues about the extent to which the image can be presented / manipulated from a particular perspective (and why this might be so) which animated documentary provides an interesting comment on.

Introduction
As film makers we often start with a question; why use animation for this project? Why make animation in the documentary genre? What is it specifically that only animation can document? In the process of trying to answer this last question I have looked at one of the things that animation can attempt to document - the inside of someone else’s head. In
order to climb inside someone else's head you may imagine that collaboration might be necessary and so I have been thinking about the idea of 'the collaborative frame'. What is it? Why would we need one? How would we use it and work within it? The films I will be discussing in terms of the 'collaborative frame' are films which are, as Paul Wells describes, in the penetrative mode. "Penetration is essentially a revelatory tool, used to reveal conditions or principles which are hidden or beyond the comprehension of the viewer." The films which I am discussing all attempt to use animation in a non-fiction way to communicate the internal experience of the subject of the film, not the film maker themselves. They all deal with different kinds of internal experiences but all attempt a collaborative approach to the gathering, authentication and communication of the experiences; from being an artist with Down's Syndrome, to having the brain trait of synaesthesia.

In my animated documentary practice the collaborative nature of what goes on inside the frame and how to develop a methodology for that collaboration is something which increasingly interests me. My work in non-fiction animation has always included aspects of collaboration with the subjects by necessity, for example doubled up (2004) about multiple births was semi-autobiographical and included many images by my twin sons as well as their voices and the voice of Jane Denton (head of the Multiple Births Foundation at Queen Charlotte's Hospital, London). I used the images that my sons had made in the visuals of the film, to underscore the verbal contribution they made on the sound track, and to include them in the visual layering of the film (which was itself about the layering of roles and identity in the artistic process). However, it was not until I made An Eyeful of Sound (2010) that I really began to address what it meant to collaborate with the subject on the outcome of the film in its entirety, not just on the sound track. In researching this aspect of making animated documentaries I am indebted to film makers Shira Avni and Tim Webb, both of whom have been more than generous in sharing insights into how they have gone about grappling with the issues I am discussing here.

What is the problem that a collaborative frame might solve?

When making non-fiction animation that represents another person's experience, the image itself can become a problematic area, even in the most straightforward so-called animated

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106 Ibid.
radio documentaries. Do you replicate a talking head style visual from live action documentaries and if so why bother to animate it? Do you illustrate what they say, and if so are you really representing what they meant? Dennis Tupicoff’s film *His Mother’s Voice* (1997) explores the way in which changing the visuals to the same sound track can alter the audiences’ perception of the film subtly but forcefully.

Animated documentary can be potent when presenting a subjective mode of documentary, often in an autobiographical context. It can also be convincing when making what Bella Honess-Roe calls a 'mimetic substitution' for footage that it would be impossible to capture any other way than by re-making and re-presenting it. But when an indexical, subjective sound track is combined with a referential, objective image then the role of the film maker in choosing what to present can become more ambiguous. Bill Nichols’ dilemma that "[t]he distinctive formulation of the camera’s (and filmmaker’s) presence as absence, so common to classic narrative, poses problems of a peculiar nature in documentary" is increased when not only the film maker but the subject of the film is present yet absent from the frame. How can the audience know whether or not the image that they are seeing is mediated beyond all recognition from the subject’s original intent when being interviewed? As Kees Driessen points out, animated documentary offers the film maker the opportunity to add "extra information about reality" to the frame, so where does this extra information come from and how is it gathered?

What do I mean by a collaborative frame?

The term 'collaboration' is a meaningful one to a lot in contemporary film making, from the context of collaborative or crowd funding (for example *The Age of Stupid*, 2009) to using

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111 Or indeed did the subject even intend to be part of a film?
112 Dreissen, K., 2007 p 2
113 Ibid, p2
114 Directed by Franny Armstrong, 2009
collaborative methods to generate plot and ideas (for example the Finnish Star Wrecks series, 1992-2005)\textsuperscript{115}. In the context I will be talking about today, however, my idea of collaboration is more intrinsic to the materiality of the film; inside the frame itself. The type of film that this approach would be most useful to, I would suggest, is the subjective, where the information being communicated is from the perspective of someone else "from the inside"\textsuperscript{116} as Shira Avni describes it. The collaborative frame is the antithesis of the "animated radio documentary"\textsuperscript{117}, where an indexical sound track is recorded and taken away to be animated separately. A collaborative frame would be one where the subject of the interview has an opportunity to have input into the image as well as the sound track; by drawing the imagery themselves, having the imagery based on their drawings or based on their descriptions of imagery. Another key component to my definition would be the opportunity of the subject of the film to feedback on the ways in which the film is developed, through comment and discussion on the work in progress. Film maker Shira Avni has explicitly worked on collaborative animation in the Downs Syndrome community since 2001. She has described how working in this way allows a voice and a creative empowerment to be given to an often ignored community. She says about the 2009 film Tying Your Own Shoes "the goal of the film is to show what it's like to experience Down's Syndrome from the inside, rather than through the lens of family, or caregivers, or the medical community, or teachers"\textsuperscript{118} Tim Webb has talked about how A is for Autism (which in the film is subtitled "A Collaboration") was commissioned by Channel 4 largely on the basis of its collaborative approach, but "[f]inding artists and other collaborators who wanted to be involved was quite difficult to start with due to finding professionals and societies willing to help and support the projects aims. ... This resulted in the decision to have one true animation collaborator, Daniel Sellers\textsuperscript{119} (the nine year old boy who contributed many drawings and animation sequences to the film). My own work (An Eyeful of Sound, 2010) involved collaborating with audio-visual synaesthetes; interviewing them about their synaesthesia, playing sounds to them and asking them to describe, draw and

\textsuperscript{115} Essentially a version of fan fiction, produced in Tampere Finland by Star Wrecks Studios Ltd, <http://www.wreckamovie.com> accessed 16th June 2011
\textsuperscript{116} Avni, S 2009 from the National Film Board of Canada website <http://films.nfb.ca/tying-your-own-shoes/shira-avni.php> accessed 13th June 2011
\textsuperscript{117} Dreissen, K., 2007
\textsuperscript{118} Avni, S: 2009
\textsuperscript{119} Personal e-mail communication with Tim Webb, May 2011
identify the exact colours of their synaesthetic reactions. As the process of animating their reactions progressed (through still images, animated images, composited frames and the final edit) they had the opportunity to alter, inform and ultimately veto the representation of their experience.

Why would you use a collaborative frame?

The films we are looking at today either portray a different perspective of the world (Tying Your Own Shoes) or a different perception of the world (A is for Autism, An Eyeful of Sound). Those perspectives or perceptions change the ways in which the subjects of the film process the world around them. Animation is a visual medium, and although it has been long associated with imagination and the fantastic, its visual plasticity can be used to make visually explicit this unique processing. A is for Autism uses metamorphosis between images to delicately point to Daniel's obsessive drawings of a train from the same angle, Tying Your Own Shoes used extensive workshopping to allow the artists involved to animate distillations of their recollections and impressions of their lives. With An Eyeful of Sound the animation was used perhaps most straightforwardly, in that I was animating what they saw and the rest of us don't, an invisible yet tangible (to them) sensation which could be double checked by them as easily as you might check the colour of your socks. An "illustrated radio interview" might attempt to show the director's perception of the subject's words but ultimately unless the subject is invited into the frame then the film will remain a third person impression. For me the work becomes more meaningful when the film does more than just tell us the story, but shows us too by allowing the visuals to be more than just an illustrative adjunct to the indexical soundtrack. In the three films I am referencing today the fact that the subjects also made a significant contribution to the visual content of the work enhances and strengthens the claim of the film to be an authentic representation of the experience at hand. The integrity of the image as a correct representation of the experience or perspective is more meaningful to me through collaborative links than photographic ones. Of course the two are emphatically not mutually exclusive, \(^{120}\) but my point here is that an over-emphasis on indexicality can be a dead end for accurate communication of something that cannot be filmed, for example audio-visual synaesthesia or other neurological states.

\(^{120}\) An example of the photographic collaborative frame would be the use of video diaries.
How can we work within the collaborative frame?

Currently I am working on a PhD by practice looking how unique brain states can be represented through animated non-fiction. My practice will be about prosopagnosia and phantom limb syndrome and I am trying to work out a way of approaching the collaborative frame with a methodology informed by my past work. I am embarking on a cycle of interviews, image making/animation and feedback with individual subjects. Working with a collaborative frame has drawbacks; it is time consuming (and therefore expensive) and can be frustrating since it relies on so many opinions being balanced to make a whole. Shira Avni has spoken about the production process of animation being hard to translate when working with non-animation artists; in Tying Your Own Shoes she worked without storyboard or animatic as the concepts of those pre-production tools were hard to convey to the artists she was working with. She ended up letting the rhythm, style and pace of her co-collaborators’ working methods dictate the material gathered and made. Tim Webb talks about the problems of collaborating with a larger group, ”.. to have more than one animation collaboration would have resulted in missed deadlines.” This point is an interesting one because working collaboratively potentially opens up the director to a whole lot of opinions, perspectives and directions that may be hard to accommodate timing-wise into a commercial production. One of the interesting issues I am thinking about is how my role as director has shifted and where it may lie in the future - as facilitator, interpreter, visualiser or even in the therapeutic arena. The power of the edit is the final judgement of the material; what to show and what to leave out? Shira Avni talks about the dilemma of the edit with so much material to include - should she cut for clarity (for the audience) or authenticity (for the participant)? Whatever the decision made this power remains with the director and in that sense the collaboration must break down slightly. Even if (as with An Eyeful of Sound and Tying Your Own Shoes) the collaborators have input and even final veto over the material the ultimate key choices (structure, clarity, context) often rest with the director.

Conclusion

As I explained at the start of this paper this is work/thought/practice in progress so I can’t claim to have cracked any of it. I do think though that if ‘animated documentary’ is going to

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121 More commonly known as ‘face-blindness’.

122 Personal e-mail communication with Tim Webb, May 2011
be meaningful as a genre then we need to look at what it can uniquely bring to non-fiction films, and my suggestion is that this may be a place to look.
An Eyeful of Sound: Using animation to document audio visual synaesthesia

Abstract:
"I don't know if you've ever heard a goat eating carrots? It's almost too much, it's so lovely"
"To be honest, um, I see things really flowingly, ...within my head... very flowingly, and forward moving, and really hard to describe..."
Julie Roxburgh and Emma Suddaby, An Eyeful of Sound (2010).
What would it be like to have abstract animated visuals accompanying every sound and musical passage that you ever heard? This was the basis of the filmic investigation into audio-visual synaesthesia, which culminated in the making of short animated documentary An Eyeful of Sound. The aim of the project was to convey the immersive experience of having audio-visual synaesthesia to a wider audience. This paper looks at the problems inherent in doing so, how the collaborative process worked and what effect this had on the directorial role. It will also discuss more broadly why non-fiction animation has the particular qualities which are suited to take such an intensely subjective viewpoint. An Eyeful of Sound (2010) was a Wellcome Trust funded collaborative project between synaesthete people, researchers and film makers. It won the 'Nature' Award for Scientific Merit at the 2010 Imagine Science Film Festival, New York, as well as several other international prizes.

Keywords: animated documentary, non-fiction animation, synaesthesia, synesthesia, animation.

"I don't know if you've ever heard a goat eating carrots? It's almost too much, it's so lovely"[123]
As an animator it seemed to me that having audio-visual synaesthesia would be like having an abstract animated film playing permanently in your head. What would it be like to have Oskar Fischinger style visuals accompanying every sound and musical passage that you ever heard? That was the basis of this investigation into this brain trait, which culminated in the making of An Eyeful of Sound.

[123] Julie Roxburgh, synaesthete, An Eyeful of Sound 2010
An Eyeful of Sound was an animated film commissioned by the Wellcome Trust and made in collaboration with neuro-psychologist Dr Jamie Ward (University of Sussex) and a group of people with audio-visual synaesthesia. The idea was to use animation to convey to the audience the intensely subjective and immersive experience of those who process the world this way; to show not tell the audience what having this extra-sensory processing is like. The film attempted to turn the uniquely subjective synaesthetic visuals which were triggered in the interviewees’ brains into accurate visual external representations. This paper looks at the problems inherent in doing so, how the collaborative process worked and what effect this had on the directorial role. It will also discuss more broadly why non-fiction animation has the particular qualities which are suited to take such an intensely subjective viewpoint.

(Insert Eyeful of Sound image 1)
still from An Eyeful of Sound (2010)

Rather than the pejorative word ‘condition’ I will use the term ‘trait’ to describe synaesthesia throughout. Condition implies the need for medical attention, whereas none of the synaesthetic people I have ever interviewed or read about experience their synaesthetic status as any kind of drawback or disability. Indeed, as Jamie Ward (2008) notes; "On the contrary, to a synaesthete, it seems like there is something absent in the experiences of the people around them”124.

Synaesthesia is a brain trait where when one sense is stimulated more than one sense will react. A suggestion for why this might happen is that in a synaesthete’s brain senses may have more neural connections125 (Harrison 2001) than in a non-synaesthetic brain, so they will experience a second (third, fourth…) sensory perception simultaneously with the one being externally stimulated. Synaesthesia may manifest in many different ways. This can mean that synaesthetic people might have coloured days of the week (e.g. Monday is red, Tuesday is yellow etc.), coloured letters, words or numbers126 (grapheme-colour synaesthesia), they may smell or taste sounds127 or even feel touch when they see others

126 See Duffy, P., 2001 Blue Cats and Chartreuse Kittens: How synesthetes color their worlds New York: Henry Holt pp 7 - 15 for an autobiographical description of the authors developing childhood awareness of her synaesthesia
127 See Ward (2008) for a discussion of synaesthete James Wannerton’s taste-word synaesthesia
being touched (mirror-touch synaesthesia). Any of the senses can be linked in this way and for some people many senses can be linked, for example the woman we worked with who could hear, see and physically feel sounds. Equally, senses can be linked in both directions, for example one of our subjects could see a red traffic light, and she could hear the sound that that particular shade of red triggered in her head, but then subsequently she saw another colour triggered by that sound - and it wasn't red.

Audio-visual synaesthesia can be experienced associatively (the subject may hear the word Thursday and see that it is bright pink in their 'mind's eye') or they may project the colour externally onto the object (so they would hear 'Thursday' and see the colour pink outside of their body). This associator-projector\textsuperscript{128} dichotomy is an interesting one as it echoes stages of the creative animation film-making process; from imagining how it will look to making the image in the real world - and literally projecting it onto a screen.

Synaesthesia was first studied in the late 19\textsuperscript{th} and early 20\textsuperscript{th} centuries but then had a hiatus for almost 50 years when very little was published on the subject.\textsuperscript{129} It has enjoyed a resurgence in interest in recent years, according to Harrison "the rise of cognitive psychology in the 1960s allowed the psychological (and neuroscientific) community to indulge once again in speculation about the nature of 'states of mind'".\textsuperscript{130} Synaesthesia is now recognised as a documented brain trait that can give valuable broader insights into how everyone's brains work. It is important to note that synaesthesia is experienced uniquely by each person who has it. Whilst a C note played on a cello may be appear as a gold silky sinuous shape with metallic glints moving from left to right to one synaesthetic person, to another (with exactly the same kind of synaesthesia) it may be a rough brown spongy blob shooting off from right to left.

Animated non-fiction has a patchy history which interestingly follows a similar time-scale to the study of synaesthesia. Animation has been used in a non-fiction context within film making from the earliest development of cinema.\textsuperscript{131} As narrative fiction in general began to dominate commercial film production in the twentieth century there was a long period

\textsuperscript{128} Dixon, M. J., Smilek D., & Merikle, P. M. (2000) Not all synaesthetes are created equal: Projector vs. associator synaesthetes Cognitive, Affective and Behavioral Neuroscience, 4, 335-343.

\textsuperscript{129} Harrison:2001 p26

\textsuperscript{130} Harrison:2001 p53

\textsuperscript{131} For example Alexander Shyaev's recently discovered films from 1906-1909 documenting his choreography for Russian ballet. Robinson, D., 2009 Alexander Shryae: Dance to Film Film History, volume 21, pp 301-310
when animation was "ghettoised"\textsuperscript{132} into a Disney bubble, before regaining status and interest in the late twentieth century.\textsuperscript{133} Animation has been used to visualise abstract scientific or technical concepts, from Max Fleischer's hand drawn 2D animated training films such as \textit{How to Read an Army Map} (1918), to the digital animation used in documentary series such as \textit{Wonders of the Universe} (2011). In this mode animation can visually simplify and explain to an audience in a similar way to a text book illustration, a version perhaps of what Bill Nichols (1991) calls the "expository" mode of documentary\textsuperscript{134}, with the images intended simply to educate and inform.

Animation has also been used to perform a "mimetic substitution";\textsuperscript{135} to represent lost or non-existent footage. For example Winsor McCay's drawn animation \textit{The Sinking of the Lusitania} (1918) which was screened as part of contemporary newsreels in the absence of live action footage of the event, or \textit{Walking with Dinosaurs} (1999) which was presented in a documentary format as if the events depicted were profilmic.

Finally animation can also be used in a non-fiction sense to detail an internal perspective, the "subjective mode"\textsuperscript{136} (Wells:1997). Tim Webb's film \textit{A is for Autism} (1992) was made collaboratively with the autistic subjects of the film, conveying a set of personal experiences. Here the medium is used for its ability to show the world from an intensely subjective perspective not using photo-realism but taking advantage of animation's ability to utilise different styles and types of animation including hand drawn and stop motion.

In \textit{An Eyeful of Sound} animation can be said to have been used purely as a visual aid (explaining to some degree the scientific context to this brain trait), subjectively (using a personal and internal perspective) and performing a mimetic substitution (the synaesthetic reactions which cannot be photographed). However the film is subjective but the film maker is not the subject of it, neither is it from their perspective. It can be said to be illustrative, yet it was intended to do more than just record a sound track and illustrate it. The mimetic substitution must be taken on trust, since only the subject of the film can

\textsuperscript{132} Paul Wells (1998) talks about Disney's stranglehold over the form "by overshadowing its history and creating an orthodox style" during this period. \textit{Understanding Animation} London; Routledge p 3.

\textsuperscript{133} The first animated documentary conference 'Animated Realities' was held at the University of Edinburgh, 2011.


\textsuperscript{136} Paul Wells (1997) 'The Beautiful Village and the True Village: A Consideration of Animation and the Documentary Aesthetic' in his (ed.) \textit{Art & Animation}, Profile no. 53 of \textit{Art & Design} magazine, London: Academy Group
authenticate its accuracy. This film could be seen therefore both as an amalgamation of these modes and an extension of them. Paul Ward (2005) argues that animation is good at representing the internal and subjective in the documentary genre, saying that it "can perfectly trace the contours of ... a shifting and rapidly condensed thought process in a way that is out of reach for live action"\(^{137}\). Animation has the ability to express and transgress the "boundary between seeing and imagining"\(^{138}\) which VS Ramachandran describes as being the most elusive in neurology (and which he studied by looking at the reactions of a projector synaesthete). Because of that transgressive ability it can deal with non-fiction subjects, like synaesthesia, which would be impossible to represent indexically.

In order to make this film the usual perspective of artist/director had to be shifted. *An Eyeful of Sound* was to be an animated documentary, arguably "a creative treatment of actuality"\(^{139}\) in its broadest sense. It was intended to immerse the audience in the experience of synaesthesia. The role of artist therefore became aligned more with the role of a facilitator or reporter, suppressing personal artistic intent in order to better represent to an audience what the interviewees were explaining.

First of all I collected a group of about sixty everyday but distinct sounds, for example; a pencil falling off a table, a car being remotely locked, an apple being bitten into, the sound of someone walking through tall grass. The sounds were chosen after discussion with the synaesthetic subjects who offered some of the sounds which induced their synaesthesia most strongly (Julie has a particular fondness for the sound of someone in squeaky shoes walking along a linoleum covered corridor). The methods used to capture their synaesthetic responses to the stimuli were threefold; firstly to play sound to the interviewees over headphones and get them to describe it verbally (which was recorded), secondly to get them to draw or paint a picture of the sound as they heard it, and finally to choose the exact colours of the sound from a Munsell colour chart. Thus the sounds that the composer and sound designer would be using in the sound track could be cross referenced visually from this evidence and the sound could be animated 'correctly' (from that synaesthetic person's perspective). Once a digital image had been made of the synaesthetic response it would be sent back to that synaesthetic person for comment and

\(^{139}\) John Grierson, famously defining the new genre in his review of *Moana*, New York Sun, 1926.
critique; to see how accurate it was. In this way we attempted to facilitate an external representation of their necessarily internal and subjective experience.

(Insert Eyeful of Sound image 2)

We also interviewed Dr Jamie Ward to give another perspective of the way in which synaesthesia might work in the brain. This provided a counterpoint to the intensely subjective stance, presenting more of an imitative perspective as discussed earlier. Although the film includes the words of a leading scientist in the field, his opinion is not valued more highly than the experiences of the other interviewees, who comment on (and occasionally contradict) his words. This was to under-cut any notion of a 'voice of god' narrator, and also to represent a non-synaesthete in the film as a counterpoint to the highly synaesthetic reactions. At one point he says rather wistfully; "If I were to have synaesthesia I would have the coloured music variety...to actually experience that way I think would be wonderful". He clearly does not experience synaesthesia yet the audience can via the substitutive animation. By using animation, which is primarily a visual medium, I can balance the authority of the verbal (which is the domain of the documentary) and allow the actual (visual) experience of synaesthesia upstage the gravitas that might be assumed by the soundtrack.

Animation is essentially a laborious and solitary process of working frame by frame. Twenty five frames are needed for one second of moving image, and so this ten and a half minute film was made up of 15,625 frames. Given the constraints of this medium the process had to be accessible and clear to the geographically scattered participants. Whenever a milestone was reached in the animation process (making a mock-up of the digital image, animating a section and so on) they would be sent a DVD of the image and sound together so that they could feedback on how it 'right' it was. We also set up a blog about the production which the film participants were made administrators of. These channels of communication allowed them to comment on work in progress and make specific the changes that they felt were necessary, for example;

"The beginning is fine, but really it would be better just to have a thick white cloud moving continuously from left to right with the little silvery things as they are. It is the flower-like images which are wrong. What is the final sound of silver? It looks like a very thin vertical pole. Black balls are not there in the music at all!"

Roxburgh, J. An Eyeful of Sound [e-mail] Personal communication, June 2009.

140
If the animation was going to claim to be able to translate unique perceptual processing into external images then there had to be a robust system of feedback. Thus at every stage of the film’s production; static images, moving animation, composited animation and final film, the participants were given an opportunity to change or improving the correctness of the images made.

(E Insert Eyeful of Sound image 3)

Evidencing the veracity of the material was key to the film’s integrity. In order to claim any substance for the authenticity of the images we had to endeavour to make the animated representation of the synaesthetic reaction as close as possible to the original experience. Ultimately the representation is just that, not an exact replica of the experience but an approximation given the limitations of the medium and the humans using it (see image 4 for Julie’s original sketch of the sound of a cockerel crowing and a still from my animated interpretation of it).

(E Insert Eyeful of Sound image 4)

There were several practical problems encountered when collecting and verifying material for this project. As discussed in the role of facilitator / interpreter of their subjective interior experience I had to completely sublimate my own ideas and opinions about the clips as an artist and repress any desires to alter, smooth over or re-interpret the imagery being described. An example of this was Tessa’s reaction to the sound of a balloon deflating, which she saw as a huge metallic silver sperm shape. Her reaction to the sound of a loon call was what looked to me like a set of midnight blue ovaries. I would not have chosen those images for the film since they have a very different resonance for most of the rest of us, but they had to be retained as the ‘truth’ of what she saw. I was on one side of the boundary between imagining and seeing and she was on the other.

(E Insert Eyeful of Sound image 5)

All the synaesthetic people we interviewed found it easier to react to sound when it was part of a more complex piece of music, rather than individual sounds. We only discovered this when we went back to play them the rough cut with sound and image together. This was unexpected and made it trickier to review which bit of visual information went with which sound, but they found this easier than single sounds. Related to this the layering of sounds on top of each other could produce a different reaction to the sound individually, so I often found myself sitting in front of a computer screen trying to translate what looked like a Kandinsky painting into individual animated clips (see image 6 for an example of this).
(Insert Eyeful of Sound image 6)

Working with the sound designer and composer we layered different synaesthetes' sound/visuals together during the sound track, making artistic decisions about what worked better or what would be more visually interesting (connecting sound and synaesthetic image). For example there may have been a sound which we had more than one visual reaction for in which case the reaction was chosen that was more visually stimulating, interesting to look at or that fitted in best with the flow of the film. This artistic/directorial over-view was the point where the shared collaborative process had to end, ultimately the film did have a director and that role afforded the opportunity to have the final word on (and ultimate power over) the material via the sound and image editing. However we tried to make this as transparent a process to the collaborators as possible.

The synaesthetic subjects of the film found the external visualising of their internal idiosyncratic synaesthetic reactions exciting. Two of them reported using the DVDs I sent them of their animated reactions as explanatory tools for their partners, families and friends. When they saw the final film screened in a cinema they spent some time picking out 'their' reactions on screen. Even though there was a selection of different people's synaesthesia being represented Emma said that the film was "made very synaesthetically" and Tessa reported that her husband now really understood what synaesthesia was after seeing the documentary. This was a challenging project which went into territory far removed from the popular concept of the animated cartoon. Like synaesthesia, animated non-fiction is an area which has slowly gathered credibility as an area for study and interest after languishing for some years. The conceptual and the perceptual, the telling and the showing, the imagining and the seeing are all areas that non-fiction animation can simultaneously inhabit and that develop the scope of what the form is able to do. The film discussed may be perceived as realistic to the subjects of the film and abstracted and dreamlike to a non-synaesthetic audience; visualisation and art work at the same time. This duality is at the root of animated non-fiction and part of what makes this genre such an interesting one to me as a film maker.

141 see <http://vimeo.com/20011009> for an example of this
142 London Short Film Festival 2010
Samantha Moore

Out of Sight: Using animation to document perceptual brain states
Who said that? The dispensability of original sound in animated documentary

Article on animated documentary for animation 2.0

There came a point in The Beloved Ones, the film I made in 2007 for the UK Film Council, when it became clear that the indexical sound recorded in the field, in Uganda, was not going to be able to be used in the final sound edit. The film is about how two women, one mother and one daughter, deal with the repercussions of the HIV/AIDS pandemic on their families. Although they are not related their stories are interwoven in the film to talk about the same situation from different perspectives. The original sound footage was recorded using the built in microphone on a video camera in windy external locations and the poor quality of the sound meant that, watching the rough cut, it was very hard to hear what they were saying. The film rests on their testimony and the audience's acceptance of it as a truthful document of the women's experience. There came a point near the end of the production process where a decision had to be made whether or not to cut and replace the edited original field-recorded sound with a re-reading of the words by actors.

Jonathan Rozenkrantz talks about sound in animated documentary "fill[ing] the gap that the non-indexical image has left" since he perceives this 'void' as a major omission in the genre. He argues that it is not the content of the sound track that is the primary point of using it but its authenticity as an indexical document relating to what the image iconically represents (2011).

However, framing the issues within the term 'indexical' in this way is not helpful here. As Tom Gunning argues in his essay 'Moving Away from the Index: Cinema and the impression of reality', Charles Sanders Pierce's original idea of the index as part of an interconnected triad of signs (index, symbol and icon) has been abstracted from its richer signifying context and been simplified to become a "diminished concept", used to describe and solve several arguments about the way that cinema works (2007:30).

The producer of The Beloved Ones, Joshka Wessels143, and I discussed my fear that the documentary status of the film would be compromised by this jettisoning of original sound. The words are the document, she said, and the document is what they are saying, not the

sound of their speech. This broader reading of what constitutes indexical fits in more responsively with Gunning’s reading of Pierce’s definition the word; he says that Pierce "by no means restricts the index to the impression or trace". Nea Ehrlich talks about animated documentary’s ability to facilitate "a convergence of exposure and concealment" (in her discussion about masking, 2011\(^{144}\)), and that intersection is the place I find so fascinating to work in. I fundamentally disagree with those who say that animated documentary’s claim to documentary status rests entirely on its link to a truncated version of the indexical through sound. The choice between using original but partially inaudible sound or authentic but re-voiced sound is not aided by an argument about which is more genuine - they both carry the indexical trace of the words - it is aided by a discussion about which will connect an audience to the material better.

Links:
Samantha Moore www.samanthamoore.co.uk
Joshka Wessels, Sapiens Productions http://www.sapiensproductions.com
The Beloved Ones http://vimeo.com/samanthamoore/thebelovedones

References:
Gunning, T., 2007 'Moving Away from the Index: Cinema and the Impression of Reality'. Differences, vol. 18, issue 1, pp 29-52

\(^{144}\) http://journal.animationstudies.org/nea-ehrlich-animated-documentaries-as-masking/