

Institution: The University of Edinburgh
Unit of Assessment: 34 Art and Design: History Practice and Theory
Title of case study: Changing Minds: Engaging with Science through Creative Documentary
<p>1. Summary of the impact</p> <p>This research, led by Amy Hardie and the Scottish Documentary Institute from 2006 onwards, investigates the practice of communicating and engaging with science through creative documentary filmmaking, developing a screening strategy heralded as 'a completely different paradigm of cinema' (5.1). By drawing out human stories in award-winning, critically-acclaimed films, it has mainstreamed complex subject matter about stem cell research, redressing public and media misconceptions along the way. One film has been watched over 112,000 times in 190 countries, while behind the camera, it has forged cross-disciplinary collaborations between artists and biological scientists that have been discussed and admired by policy-makers in Brussels and Tokyo.</p>
<p>2. Underpinning research</p> <p>This research addresses areas of science which are often sensationalised by the media, mythologised by the public, or not discussed openly at all. The subjects range from palliative care to neuroscience and stem cell research. The principal researcher is Dr Amy Hardie, Head of Research at the Scottish Documentary Institute, Edinburgh College of Art (2003-).</p> <p>Since 2005, Hardie has been exploring the potential for the subjects and audiences of factual films to co-create their meaning, through a reciprocal relationship with the film-maker and participation in the film-making process. The research has looked at the impact of this unconventional approach on stakeholders. It has found, for example, that it can elicit a deeper understanding of complex subject matter on the part of the viewer.</p> <p>The primary research methodology is the process of documentary making itself, with secondary methods including post-screening workshops, questionnaires and qualitative interviews.</p> <p>Dr Hardie first used 'co-creative' film-making in the development of her film, <i>The Edge of Dreaming</i> (2010). Screenings at the rough cut stage (2008-09) presented the autobiographical story-so-far, showing how, within a year, the film-maker had had three death-related dreams, declined in health and intervened to change her fate. At the screenings, around 400 people (aged 18-80) discussed the meaning of the rough cuts in semi-structured workshops of c. 30 people. Together with the input of Professor Mark Solms, Chair of Neuropsychology at the University of Cape Town, and other experts, their insights were used to interpret Hardie's story and give meaning to its completed form, as well as to collate evidence on audiences' expectations of factual films and the neuroscientific processes involved in being receptive to different types of filmic narrative.</p> <p>In 2006, Dr Hardie began collaborating with Professor Clare Blackburn of the Centre for Regenerative Medicine, University of Edinburgh. Bringing together artists and scientists, they made a series of films, including <i>Stem Cell Revolutions</i> (2011), which sought to engage diverse audiences with the evolution of stem cell research. They did this through visualisation, use of shared, non-scientific language, the forging of a narrative between two of the main protagonists, and an emphasis on the 'what if' approach common to art and science. Screenings explored the capacity of diverse audiences to engage deeply with both the human and scientific aspects of the film, with feedback used to shape its final edit.</p>

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In 2011, Hardie returned to the theme of living in the shadow of death with *The Singing Hospice*. Forty staff and patients at Strathcarron Hospice participated in the film-making process, with Hardie creating opportunities for their artistic self-expression in the midst of clinical procedures. (5.11)

3. References to the research

3.1 Hardie, Amy *The Edge of Dreaming* 2010

Website: http://www.amyhardie.com/tags/the_edge_of_dreaming

This seventy-three minute documentary film was funded by the National Lottery through Scottish Screen and by an international consortium of VPRO (Netherlands), ZDF/ARTE (France and Germany), More4 (UK) and POV (UK). It was selected for competition in the International Documentary Film Festival Amsterdam (IDFA) and won the Grand Critics Prize in the Mirror category at Kiev International Film Festival (2010). Translated into thirteen languages, it has been screened at festivals in thirty-one countries, with cinema distribution in six (represented by international agent, Peter Jäger). In November 2011, Dr Hardie published a paper on the film's co-creative production – *Symbolic Cinema & Audience Engagement* – in *Participations: The Journal of Audience and Reception Studies* (Volume 8, Issue 2), guest edited by Ailsa Hollinshead

(URL: <http://www.participations.org/Volume%208/Issue%202/3e%20Hardie.pdf>)

3.2 Hardie, Amy and Blackburn, Clare *Stem Cell Revolutions – Vision of the Future* 2011 (REF 2 Output Submitted)

Website: www.stemcellrevolutions.com

This seventy minute documentary film was funded by a Wellcome Trust Society Award of £190k and by the 6th Framework Programme of the European Union. It is supported by Creative Scotland and the Scottish Government. It has been shown in five European countries to date, with invitations to screen in Japan, Canada and the USA (sponsored by a leading scientific journal). It won Best Documentary at the Milan Science Festival (Vedere la Scienza), 2012.

3.3 Hardie, Amy and Blackburn, Clare; *A Stem Cell Story* 2006

Website: <http://www.eurostemcell.org/films#story>

The first of six short films on stem cell research, this fifteen minute documentary premiered in December 2007 at the European Parliament in Brussels and has been recommended by the Scottish Government agency, Learning and Teaching Scotland, as a tool for National Qualifications support. Winner of the Best TV/Video Production at the Tromsø Science Media Festival 2006 and Best Short Film at SCINEMA, the 6th International Festival of Science Film (Australia, 2008), it has also screened competitively in Singapore, Switzerland and Italy. It has been translated into five languages and viewed over 15,000 times on YouTube.

4. Details of the impact**The Edge of Dreaming: Uptake and critical reception**

The high levels of audience participation achieved in the production of *The Edge of Dreaming* have resulted in sustained levels of audience and critical engagement with the film post-completion and distribution: three years after its completion it continues to be invited to screen in new countries. Building on the rough cut screenings, which drew on ethnographic research into seventeenth-

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century Iroquois American culture, neuroscience and traditional wisdom, the workshop Dr Hardie developed public screenings has been described by one audience member, Kathy White, (5.1) as a 'completely different paradigm of cinema' during which she was 'drawn into a participatory role, actively witnessing and engaging with themes and issues that are both universal and deeply mine.' Celebrated by another participant as 'part science lecture and part conversation and above all fascinating and hugely therapeutic' (5.1), the film and workshop package opened the annual Brainwave Festival at the Rubin Museum of Art in New York in 2010 and ran for three weeks, attracting audiences of up to ninety people per session, before an eighteen-city US tour and invitations to run the workshop in a further thirteen countries. As well as generating print media coverage in twenty-three countries, it led to a broadcast interview with Dr Hardie on the CBS news channel (5.4), bringing neuroscience and Scottish documentary making to a mainstream audience.

Picking up on the impact of *The Edge of Dreaming* on audiences, Festival Director Neasa Ni Chianáin described it as 'a hugely empowering film' and the 'perfect' opener to the 5th International Guth Gafa Documentary Film Festival in Éire, 2010 (5.5). In the same year, it was the first Scottish feature documentary to be selected for international competition in IDFA, Europe's leading documentary festival, during which it was Festival Curator Nick Cunningham's 'pick of the day' and received a five-star review by Tue Steen Müller, Director of the European Documentary Network (1996-2005) (5.6). In total, it has been screened at festivals in thirty-one countries, including Sweden, Italy, and Australia. Winning a Grand Critics Prize in Kiev, It has also been translated into thirteen languages, increasing its accessibility to international audiences.

Stem Cell Revolutions: Communicating scientific knowledge

In *Stem Cell Revolutions*, Dr Hardie returned to the participatory screening method, both during and after production. The 'roadshow' format that she developed with Professor Blackburn for this film built on their own cross-disciplinary collaboration; moving away from passive reception of information and bringing the audience into conversation with leading scientists and clinicians (5.7). Often as part of a Science Festival, events have been held throughout the UK (from Orkney to London), as well as Republic of Ireland (Galway), Germany (Heidelberg), Czech Republic (Prague), Japan (Kyoto), Australia (Sydney), and Sweden (Nobel Museum, Stockholm) (5.8), and has screened 'in competition' at several international science festivals. Detailed feedback collated during production and distribution, including by questionnaire, has revealed that 'lay' audiences appreciate and engage with specialist material more than previously understood by television commissioners, with one contributor saying 'Coming from a non-science background, the film encouraged me to reflect more on the role of science within society' and another commenting that it was 'very informative but presented in a very accessible way.' (5.2)

The stem cell documentaries' YouTube channel logs 44,123 viewings of the shorter documentaries (5.9) and 68,000 people from 190 countries have downloaded the films from www.eurostemcell.org, the main infrastructure for communication between stem cell scientists and European publics. Visits to the website were up 35% in 2011, compared to the same period in 2010, and it now receives over 200,000 visits annually, leading to Professor Blackburn being awarded €0.83m under the 7th Framework Programme of the European Union to develop it further. In 2012, Hardie and Blackburn were awarded the University of Edinburgh's Tam Dalyell Prize for Collaboration in Public Engagement with Science. Government briefings in the UK, Europe and Japan have reported on the value of the outreach tools and media developed through the project, including at the European Parliament in December 2007, chaired by Pia Locatelli MEP. (5.10)

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5. Sources to corroborate the impact

Copies of these web page sources are available at

<http://www.wiki.ed.ac.uk/display/REF2014REF3B/UoA+34>

(5.1) Rubin Museum of Art's description of *The Edge of Dreaming* workshop, with testimony from Kathy White re effect of creening and links to reviews in The New York Times and Wall Street Journal: <http://tinyurl.com/lcpa23>

(5,2) Other audience feedback on *The Edge of Dreaming* film and workshop available on request.

(5.3) *The Edge of Dreaming* reviews: <http://tinyurl.com/mfqm3e8>

(5.4) CBS News interview: <http://tinyurl.com/lq7huc>

(5.5) Neasa Ni Chianáin describes effects of screenings of *the Edge of Dreaming*:
<http://tinyurl.com/lcge9fd>

(5.6) Tue Steen Müller review: <http://tinyurl.com/m4feh5n>

(5.7) *Stem Cell Revolutions* preview feedback: <http://tinyurl.com/n47ffw4>

(5.8) *Stem Cell Revolutions* – corroboration of Nobel prize for Gurdon and Yamanaka:
<http://tinyurl.com/8wpqdt>

(5.9) *Stem Cell Stories* web portal with links to reviews/feedback: <http://www.eurostemcell.org/films>

(5.10) *Stem Cell Stories* at European Parliament: <http://tinyurl.com/k8ommme>