

Forecasting the future: legitimising hope and calming fears in the embryo stem cell debate.

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Introduction

The media are a crucial site through which public issues are framed, serving as the focus of intense lobbying and acting as an arena within which policy struggles are defined and played out.¹ They can also have a demonstrable, although not predetermined, impact on how we think.^{2 3 4} How scientific/medical issues are represented in the media is thus an important area to study when examining the battle both for public opinion and for legislative change.

High-profile crises around issues such as AIDS, GM foods, BSE and the MMR vaccine have all attracted scholars to attend to media representations of risk and the processes through which these are constructed.^{5 6} Rapid developments in human genetic research, and the associated media hype, have been the focus of particularly intense scrutiny. Researchers have variously examined journalists' relationships with scientific sources, the accuracy or sensationalism of reporting and how language, metaphors and imagery may be used to frame issues in particular way.^{7 8 9} A theme running implicitly through much of this research is the core question of how the media cover risk predictions: how they address the potential social and ethical consequences and evoke 'bio-fantasies' about the impact of current scientific endeavours.

Debates about developments in biotechnology offer a classic example of the dilemmas in contemporary 'risk society'. As Ulrich Beck has highlighted, science is now seen to produce unprecedented implications which outstrip the ability of 'experts' to predict or control them. The argument is, therefore, that technological developments should be opened up for public criticism. The analysis which follows thus, in part, contributes to debates about the media's role in airing diverse concerns from competing sources and their ability to perform, in Beck's terms, as 'cultural eyes' through which citizens can 'perhaps win back the autonomy of their own judgement'.¹⁰

This chapter is also located within the growing literature emerging from Science and Technology Studies (STS) on the sociology of expectations and prospective techno-science. Our work is founded on the observation that the implications of any scientific/medical developments are not pre-determined by the technological 'facts' and how people respond to such developments is not pre-ordained. The future of science and technology does not result from a linear, or naturally evolving process but rather, 'the future of science and technology is actively created in the present through contested claims and counterclaims over its potential'.¹¹ From this perspective, analysts need to explore 'how the future is mobilised in real time to marshal resources, coordinate activities and manage uncertainties'.¹² The media have a crucial role to play in these processes. The significant questions for us, then, are how is the future constructed in the press and television coverage of stem cell research? How do proponents of research into this new technology invite media audiences to imagine, believe in and endorse one vision of the consequences rather than another? Who do journalists' define as having the authority to comment and how do the scientists involved in such advances seek to gain authority not only over molecules, DNA or genes, but

over crystal balls and thus the fears or aspirations of publics, policy makers and investors?

We explore these questions through a case study of UK media coverage of the stem cell debate during the year 2000, focusing particularly on embryo stem cell research. This was a crucial year because it was in August 2000 that a committee of experts chaired by the Chief Medical Officer, Professor Donaldson, published its report reviewing the area of embryo research. The report was launched with a fan-fair of publicity explicitly in order to generate wider public debate about the future of stem cell research before its recommendations were considered by parliament. (Policy makers, at least in the UK, have reacted to previous controversies by trying to be seen to adopt more democratic and transparent procedures which invite public involvement). One of the principal recommendations of the report was to expand the ways in which embryos could be used to include research aimed at increasing understanding about human disease and disorders and treatments. It suggested that such research should be permitted on embryos created either by IVF or by cell nuclear replacement (CNR) subject to the controls in the 1990 Human Fertilisation and Embryology Act. (CNR involves inserting the nucleus of an adult cell into a donated egg from which the original nucleus has been removed, a process often referred to as cloning). The Government subsequently drafted regulations to turn these recommendations into law but allowed members of parliament a free vote (not determined by party membership). The Human Fertilisation and Embryology (Research Purposes) Regulations 2001 were passed by the House of Commons on 19th December 2000.

The following section of this chapter presents our research methods. We then present a brief overview of the media coverage before going on to examine the different vocabularies, definitions and frames used by each side in this debate and explore the strategies used to frame utopian hopes as ultimately more credible, valid or worthy than the dystopian fears. Our discussion reflects on the implications of this research for understanding media coverage and the human genetics debate in the context of media studies theory, debates about risk society and the emerging field of the sociology of expectations.

Method

Our analysis draws on a comprehensive archive of reporting about all aspects of human genetic research for the year 2000 in all national UK newspapers and main TV news bulletins.¹³ Each newspaper article in this archive is indexed onto computer by its date, headline, journalist and format (e.g. news report, editorial or feature article). Each TV bulletin is coded in a similar way (adapted to take into account differences in the media form e.g. coding for 'studio-based' and 'outside broadcast'). Every item is also coded for the main story focus, who was quoted and any potential medical, ethical, social or legal risks which are mentioned. Scanning this database for all articles about stem cell research identified two periods of intense media interest: the 13th to the 30th of August 2000 around the release of the Donaldson report and the 19th to the 21st December 2000 around the subsequent parliamentary vote. During these two time periods there are a total of 55 newspaper items and 8 TV news bulletins about embryo stem cell research.

An in-depth quantitative and qualitative analysis of this sample was conducted. We examined the conflicting visions of utopia/dystopia presented in the media, paying close attention to metaphors, references to science fiction and use of historical analogies (e.g. the moon landing). We also looked closely at sentence structures and vocabulary. The latter included, for example, analysis of time references (e.g. 'now', 'soon', 'eventually') and all mentions of 'hope', 'promise' and 'potential'. We also examined the use of words implying *certainty* (e.g. 'guarantee', 'shall'), those implying *possibilities* (e.g. 'expectation', 'prospect', 'chance') and those emphasising *uncertainty* (e.g. unlikely, doubtful).

In addition to the above we looked at how authority was assigned (or not) to different perspectives by journalists and by their sources. This included analysing how speakers were introduced and how their contributions were framed (e.g. as mainstream or marginal). We also systematically coded all uses of the word 'expert' and associated adjectives (e.g. 'respected', 'eminent', 'leading') as well as terms suggesting collective opinion (e.g. 'the scientific community' or the 'medical world').

As with all analysis of texts it is important continually to reflect on context and not to assume a strict quantitative/qualitative divide.¹⁴ *Qualitative* analysis alone can convey false impressions of the overall pattern of coverage and fail to attend to significant diversity. *Quantitative* analysis on its own can be equally misleading. Content analysis can never be conducted as if it were a merely mechanical process - counting words regardless of how they are being used. We repeatedly returned to the full texts to ensure that we combined qualitative insights with quantitative thoroughness. The word 'potential', for example, is used within the stem cell debate in very different ways. It can be used to refer to the medical potential of stem cell research, the biological potentiality of stem cells themselves, or to the potential of an embryo to become a baby. Attention to the different ways in which words are employed is a crucial part of our analysis. In the presentation of our findings we always draw attention not only to patterns in the coverage, but also to any *exceptions*.

Before presenting our findings it is important to note some of the limitations of this research. Ideally media research should take into account the entire circuit of mass communication – including studying how media reports are produced and how they are consumed. However, our main focus here is simply to highlight the different rhetorical techniques used in the public debate, making more transparent some of the ways in which hopes are presented as having greater credibility than fears, highlighting inconsistencies and allowing us to reflect on the issues that might be obscured in the process.

Findings

Utopia or Dystopia? The key protagonists and the balance of media coverage

The stem cell debate came across in the media (and, indeed, played out in parliamentary debates) as a dispute between two sharply contrasting perspectives with little room for ambivalence. The supporters of embryo stem-cell research

emphasise the positive practical outcomes which might ensue. News footage from the Donaldson report press conference, for example, shows Professor Donaldson declaring that such research could open up 'a new medical frontier with enormous potential' (*Channel 4 Evening News* 16 August 2000). He asserts that 'if the expected breakthroughs occur from this research and move forward into treatment we will be able to make a major contribution to the relief of human suffering' (*BBC 6pm News* 16 August 2000). Some of the subsequent media coverage conjures up visions of a world free from sickness and disease. Stem cell research could 'herald the start of a medical revolution' (*Sun* 17 August 2000), usher in 'the dawn of a new frontier' (*Daily Mail* 17 August) and be the 'key to unlocking a new chapter in medicine' (Anchor, *C4 Evening News* 19 December 2000).

In contrast, opponents of the Donaldson recommendations envisage a very different future. Embryo research is not only inherently wrong but also sets dangerous precedents for an accelerated abuse of human life and, eventually, for full reproductive cloning. The proposed changes in legislation represent 'a huge leap in the wrong direction for mankind', 'a dangerous and slippery path' which will 'open the floodgates' (Movement against Human Cloning, *Daily Mail* 16 August 2000; Cardinal Thomas Winning, *Sunday Telegraph* 20 August 2000; Research director for Life, *Independent* 19 December 2000).

Systematic analysis of who is quoted in the press and TV reporting shows that the 'pro' and 'anti' lobby are represented by a narrow cast of characters. The pro-Donaldson side is voiced largely by patients, Labour politicians and scientists, (e.g. Professor Lord Winston). Their opponents consist mainly of religious representatives, Conservative politicians and anti-abortion activists. Figures 1 and 2 illustrate clearly this stark, binary division. [Insert Figs 1 and 2 near here].

Analysis of how often each side is quoted, and the amount of airtime devoted to each, shows that the media coverage displays a fairly 'balanced' use of sources. However, not only is there (as we will show) a subtle privileging of the 'pro' position but many journalists also explicitly come out in *favour* of embryo stem cell research. (This was particularly true in the newspapers, rather than in the TV news bulletins – the latter having an obligation to objectivity). The Science Editor for the *Express*, for example, robustly supports stem cell research under the headline, 'Only the Devil could say no to cloning: We have the power to change medicine forever - it's time we used it' (*Express* 16 August 2000). Such positive sentiments are also reflected in editorials across a wide range of newspapers: 'The benefits of cloning leave no room for doubt' (*Express* 17 August); 'Say yes to cloning research' (*Financial Times*, 17th August); 'A power for good. Medical gains which must not be shunned' (*Guardian* 17 August 2000).

Fig 1: Newspaper sources: showing number of articles containing quotes from people in these categories *supportive* of or *opposed* to embryo stem cell research*

Categories*	No. of articles containing quotes supportive of stem-cell research**	No of articles containing quotes <i>critical</i> of stem-cell research***
Scientists/drs	22	0
Labour MPs	10	0
Professor Donaldson	6	0
Govt spkspson	4	0
Patients/Patients support groups	4	0
Lib-dem MPs	2	0
Lord Alton (cross-bench peer, Pro- Life campaigner)	0	3
Conservative MPs	1	14
Religious figures	0	13
Prolife grps	0	13
Genetic Watchdog grps	0	3
Other	3	2
Totals	52	48

* These categories are based on the introductions provided in the article (or on screen). For example, Peter Garrett was sometimes introduced as the Director of Life and sometimes as a representative of 'The Movement Against Human Cloning'. Similarly Ann Begg sometimes spoke of her experiences as a patient, but was usually introduced as an MP. Such diverse presentations can be an important lobbying strategy and are discursive acts in themselves. The categories used in coding any individual always echo the media framing rather than superimposing other categories.

**This is the number of articles containing this type of quote not the number of quotes

***There were only five quotes which could not easily be assigned to the pro or anti research categories, and these have been excluded from the table.

Fig 2. TV news sources: showing number of bulletins featuring people in these categories *supportive of or opposed to* embryo stem cell research

Category of person (as identified on screen)	No of bulletins featuring this category of person speaking in <i>support of</i> embryo stem cell research (and the total time for which they spoke)**	No of bulletins featuring this category of person speaking <i>against</i> embryo stem cell research (and the total time for which they spoke)
Labour MPs	5 (372 secs)	0
Professor Donaldson	4 (69 secs)	0
Other scientists/drs (Profs Winston/Higgins)	2 (198 secs)	0
'Patients' /Patients' support groups	5 (128 secs)	0
Ruth Deech HFEA	1 (15 secs)	0
Conservative MPs	0	3 (38 secs)
Pro 'Life' spokesperson	0	2 (27 secs)
Genetic watchdog groups	0	2 (177 secs)
Helen Watt ('clinical researcher and Roman Catholic')	0	2 (30 secs)
Jacqueline Laing (Professor of Law, London Guildhall University)	0	1 (20 secs)
Dr Nicholson (Editor of the bulletin medical ethics)	0	1 (180 secs)
Dr Bruce (Director of Society, Religion and Technology project for Church of Scotland)	0	1 (180 secs)
Rounded totals:	13 mins	11 mins

** Note this is the number of bulletins including footage of this type of speaker, not the number of speakers.

Describing stem cell research: contrasting language and evocations

The sharp division between those who were 'pro' and those who were 'anti' embryo stem cell research carries through not only in their explicit assertions but also in more subtle ways in their use of language about particular biological entities or research techniques. For example, both sides agree that CNR produces cloned embryos, however proponents prefer to use the term 'pre-embryo' or 'blastocyst', whereas opponents of this process are much more likely to emphasise the term 'human embryo'. The opponents of Donaldson also sometimes describe CNR simply as 'human cloning', implicitly conjuring up visions of full reproductive cloning. By contrast, those supporting the Donaldson report prefer to describe it as 'therapeutic cloning' - a term which brings the idea that this technique can provide therapies into the label of the experimental process itself. Referring to CNR as 'experimental medical research' would not carry the same positive associations.¹⁵

Another key word in this debate is 'potential' – in this case this is a word frequently used by protagonists from both sides of the debate. However, the concept of potential is applied in very different ways. For opponents of embryo stem cell research 'potential' is about the embryo's latent (or not so latent) status as a human being.

This however is deconstructed by their critics. Prominent pro-Donaldson MP, Ian Gibson, argues, for example, that 'fertilised eggs die or are destroyed by nature, and the embryo has *only* potential for human life' (*Guardian* 15 August 2000, our emphasis). Roger Highfield, for the *Telegraph*, goes further: 'the potential of an egg fertilised in the lab is limited: it will not develop for more than a few days unless placed in the womb. And the concept of potentiality is too broad to be useful' (*Daily Telegraph* 16 August 2000). The same deconstruction of the concept of 'potential' is never applied to the potential of stem cell research itself. Instead, pro-Donaldson protagonists make liberal use of the language of potential (on 54 occasions) to evoke the possibilities opened up by such research.

An idealised future is also brought into the imminent present with the juxtaposition of words such as 'prospect now' (*Guardian* 17 August 2000) and the positive use of 'can' and 'could' (employed much more often than more uncertain terms such as 'may' or 'might'). An appeal by an MP that 'Future generations should not *needlessly* be condemned to a "living hell"', is clearly based on an assumption that such suffering is unnecessary because a cure can be found (*Guardian* 20 December 2000, our emphasis). A remark from Christopher Reeve (a famous actor whose spinal cord was severed in an accident) that being able to walk again is 'a motivating vision of what *will* happen' leaves little room for doubt (*C4 Evening News* 16 August 2000, our emphasis). It is only a question of time. Another pro-Donaldson speaker mobilises a historical reference point in a classic call to action. This representative of a Parkinson's research interest group is, we are told, 'now certain there will be a cure'. 'The same principle applies as putting a man on the

moon' she declares 'We say we are going to do it and work backwards from there' (*Independent on Sunday* 13 August 2000).

Struggles to legitimate contrasting visions of the future also involve very different descriptions of the legislative changes recommended by the Donaldson report. Opponents talk of bridges being crossed, cats let out of bags and previous legislation being turned 'on its head' (Peter Garrett, *BBC 1, 9pm News*, 16 August 2000; *Daily Mail* 17 August 2000). By contrast, supporters of Donaldson's recommendations repeatedly assert that the proposed legislative changes do not necessitate 'crossing the Rubicon', and do not raise any 'new issues of principle' (*The Times* 17 August 2000). Proponents also sometimes play down the novelty of the scientific procedures that might ensue. While opponents of embryo stem cell research present proposed developments as radical and alarming innovation, proponents, by contrast, imply that it is not very different from anything that has gone before. Professor Robert Winston, for example, declares that, "this type of research has been going on for 20 years" (*BBC2 Newsnight* 16 August 2000) while other supporters draw parallels with more familiar techniques such as blood donation or skin grafts (Ian Gibson, *C4 News*, 16 August; Science editor *Express* 16 August 2000).

There is an interesting inconsistency here. In many contexts proponents of embryo stem cell research use the language of breakthrough and 'frontier' science to underline its innovative status. In other contexts, however, they sometimes normalise it in an effort to make it appear more familiar and acceptable. Such inconsistency is also subtly illustrated by the different ways in which pro-Donaldson protagonists present the suggestion that the research might lead to growing whole limbs or organs. Sometimes they emphasise that such outcomes are *not* imminent. The editorial in the *Express*, for example, reassures readers that, 'no one is suggesting that human embryos should be cloned for reproductive purposes. Even cloning a whole organ, such as a liver or heart, remains a long way off' (17 August 2000). A similarly pro-Donaldson report in the *Independent on Sunday*, informs us that: 'We are not talking about Dolly-type technology. It is not about growing a new hand or heart' (13 August 2000). However, on other occasions, the possibility of growing new organs is presented in support of the Donaldson recommendations. For example: 'Lord Robert Winston...is backing the change in the law and said it would not be long before scientists can grow whole organs' (*Sun*, 17 August 2000) or 'Ultimately, whole limbs and transplant organs could be generated. The research holds out hope for people like former Superman star Christopher Reeve' (*Daily Mail* 17 August 2000).

The above discussion has highlighted how pro- and anti- Donaldson protagonists conjure up competing ideas about the nature of the proposed changes and their implied consequences. However, it is not only a question of who can make the *substance* of their point of view appear most convincing. The issue is also who can present *themselves* as most credible and their point of view as most 'right-thinking'. The following section examines how pro-Donaldson commentators sought to characterise their perspective (often with the support of journalists) as ultimately more legitimate by associating their position with the right sort of people, the right 'ways of knowing' or the right sentiments and values.

Constructing the 'right' point of view

The voice of rationality, truth, expertise and progress

The dispute around stem cell research is represented as a conflict between rationality and emotion, fact and fiction. Pro-Donaldson protagonists regularly acknowledge the 'upset', 'instinctive unease', 'fear', 'horror' and 'abhorrence' some people might feel about embryo research. However, such acknowledgement is used to underline the fact that the potential benefits are so great that they outweigh such concerns. In some cases 'gut' feelings against using embryos are acknowledged in order to dismiss such reactions as the 'yuk' factor' or the product of 'hysteria-mongers' misleading the public about the true nature of the research' (*Sunday Express* 13 August, *Express* 16 August 2000). Although both sides are described by journalists as 'passionate' about their point of view (e.g. *The Times* 20 December 2000), more rational, less instinctive, commitments are attributed to the pro stem cell position. We are informed, for example, that 'The Donaldson report...offers a well-balanced approach to one of the most emotive issues in science policy' (*Financial Times* 17 August) and that the Human Fertilisation and Embryology Authority which supported the report is 'an august and highly rational body' (*Express* 16 August).

Whilst proponents are basing their conclusions on 'the facts', opponents, it is suggested, are being misled by science fiction fantasies. When we systematically analysed every reference to science fiction scenarios, an unexpected finding was revealed. Explicit references to science fiction are not used by opponents of embryo research, but appear instead only when *attributed* to them by *proponents* of the research. The Minister for Public Health, for example, declares, "claims that these regulations will lead to human reproductive cloning are based in science fiction, not in law. It would be dreadful if fears of science fiction are to prevent research which promises hope to real lives" (*Channel 4 News* 19 December 2000). These sentiments are echoed by journalists' statements such as, 'Pro-life campaigners and religious groups will denounce the move as a step towards "Frankenstein" technology' or that 'scaremongers' might spread 'unfounded Frankenstein fears' (*Sunday Express* 13 August; *Express* 14 August; *Express* 17 August 2000). Science fiction is thus not so much a way of promoting concern about science, used by the anti-Donaldson camp. Rather it is here used, by Donaldson *supporters*, as a rhetorical weapon to discredit the opposition.

Alongside such descriptions, supporters of embryo stem cell research make strong claims on the concept of expertise. These claims are routinely supported by journalists. In fact the word 'expert' is used by journalists *exclusively* to describe scientists and medical practitioners who support the Donaldson report recommendations. It is *never* used about ethicists, religious leaders or, indeed, qualified medical practitioners or scientists who oppose them. In addition journalists emphasise the number and range of experts in favour of embryo stem cell research. The Donaldson press conference was, of course, carefully choreographed to underline the massive support for its recommendations from a range of key scientific and medical bodies. There was also intensive lobbying throughout the period leading up to the parliamentary vote from bodies such as The British Medical Association. This high level of national expert consensus is

reflected in journalists' coverage. TV bulletins and newspaper articles list the impressive phalanx of organisations who supported the Donaldson proposals and campaigners often underline the fact that the majority of experts (or all who 'count') are on their side. "Every *respectable* biologist" would support the Donaldson report, pronounces Professor Winston (*BBC2 Newsnight* 16 August 2000, our emphasis). Journalists reiterate this point, sometimes implying unanimous support of 'the scientific and medical community' (*Express* 17 August 2000) or what one journalist calls 'the scientific and medical world' (*Daily Mail* 17 August 2000).

There are only two exceptions to this type of formulation in the press. An article in the *Daily Mail* (21 December 2000) by their Foreign Service in Berlin, reports on German criticism of the UK parliamentary vote. This includes a statement from the German Chancellor declaring that the 'German research community' is opposed to ending the ban on embryo stem cell research until the full potential of adult cells is better understood. Such German dissension is also mentioned in a piece by the anti-Donaldson campaigner, David Alton (*Sunday Express* 13 August 2000).

At the same time as claiming a monopoly on rationality, realism and expertise, proponents of embryo stem cell research characterise their opponents as old-fashioned, or even Luddite. Ian Gibson, writing in the *Guardian*, epitomises part of this approach in his piece entitled: 'Already battle lines are being drawn in the stem cell debate. I'm on the side of reason and progress' (15 August 2000). The *Sunday Express* editorial frames resistance to stem cell research in terms of a traditional 'fear of almost any technological development [...] That fear is at its most hysterical when it comes to breakthroughs in the field of genetics' (13 August 2000). Those who seek to stand in the way of medical progress are characterised as anti-science and ultimately anti-democratic, seeking to impose judgements coming from the very margins of contemporary society. The *Express* dismisses concerns as '*medieval* objections' (16 August 2000, our emphasis) and the *Financial Times*' editorial advises that, 'A modern secular society cannot accept the extreme view of some religious and anti-abortion groups' (17 August 2000).

The ways in which 'masculine' authority, boldness, frontier spirit and rationality are contrasted with the implicitly 'feminine' marginal, fearful, hysterical or anti-science voice in the above analysis has been well documented by previous commentators on science.¹⁶ What is particularly interesting about the stem cell debate, however, is the way in which such traditional ways of asserting legitimacy are combined with more 'emotive' discourses about social and family networks and explicit appeals to compassion and hope.

The voice of compassion and hope

Although opponents attempt to claim the moral and ethical high ground in relation to human life, supporters of embryo stem cell research refuse to be cowed by these claims. Instead they make counterclaims by inverting the argument. Challenging 'pro-life' positions, the Wellcome Trust Director declares, 'stem cell research is about life - the potential to cure or create healthier lives for the diabetic, the leukaemia patient, the Parkinson's sufferer or stroke victim' (*The Times*, 20 December 2000). Far from being unethical to conduct such research, it would be 'unethical' not to proceed (*Daily Mail* 17 August 2000), a 'blinkered

approach to this technology is an appalling betrayal of the millions of people who suffer from degenerative diseases' (*Express* 17 August 2000).

The potential benefits of embryo stem cell research are not just presented in abstract in terms of the 'millions' to be cured but are seasoned with vivid, personalised vignettes. For example we are told that voting for the Donaldson recommendations is a vote in favour of 'the woman with Parkinson's who struggles with speech so she cannot sing nursery rhymes to her children. The grandfather who cannot enjoy his grandchildren growing up because of the devastation of stroke.' (Public Health Minister, *Daily Mail* 20 December 2000). In addition to such vignettes, the voices of those speaking out about their own, or their families, suffering has a key part to play in the debate (and such personal accounts can have a huge impact on audiences, see Henderson and Kitzinger, 1999). Anne Campbell, Labour MP for Cambridge, for example is 'one of several MPs with heart-rending family stories to share' (*Guardian* 20 December 2000). Ordinary 'sufferers' are also given great prominence. Two TV bulletins about the Donaldson report open with interviews with people with diseases, in each case giving them precedence over shots of the press conference itself (*BBC1 9pm News*; *ITN Evening News* 16 August 2000). The importance attributed to the 'patient's voice' is underscored by the fact that, in contravention of traditional news room practices, almost twice as much air time is given to ordinary people representing patients than to Professor Donaldson himself (see table 2).

The concept of 'hope' is the last, but by no means least significant of the terms we wish to highlight in this analysis. Hope is a crucial commodity in this debate. The word 'hope' in relation to embryo stem cells is used 24 times in the 55 newspaper articles and 17 times within the eight news bulletins in our sample. 'Hope' performs specific rhetorical purposes. Media consumers are told that embryo research offers 'hopes of amazing breakthroughs in medicine' (*Guardian* 18 August 2000) or, more specifically, that 'the hope is that they [stem cells] can be turned into skin, bone, and even one day complete organs, all of them exact matches of the patients' (Neil Dickson, *BBC Evening News* 19 December 2000). The embryo is re-inscribed in this debate. It ceases to represent itself (or the hope of pregnancy) and becomes instead a beacon of hope for the sick. A close up image of an embryo looms into the foreground on a news bulletin as we are informed that 'those small clusters of cells...could offer hope to thousands living with devastating diseases' (*BBC Evening News* 19 December 2000). A photograph in the *Mirror* newspaper is simply captioned 'HOPE: an embryo' (20 December 2000).

The use of the word 'hope' means that scientists who might not confidently 'predict' effective treatments are able to invoke limitless, and imminent, potential, while at the same time allowing for an escape clause. Hope is not identified here as a human aspiration or emotion. Nor is there much discussion of the potential gap between wishful thinking and reality. Instead hope is presented as a basis for claims-making and as an imperative to action. The concept of hope substitutes for any serious engagement with the 'ifs' raised in Professor Donaldson's careful statement at the press conference quoted at the beginning of this article ('if breakthroughs occur and if they translate into treatment.') On the few occasions when pro-Donaldson speakers do acknowledge any doubts, they simultaneously

underline the fact that embryo stem cell research is 'the only chance'. Indeed, the 'right to hope' and the 'power of hope' (*C4 Evening News* 16 August 2000) is a central conceptual pillar making resistance to stem cell research appear morally reprehensible.

In our description of our analytical method we emphasised the importance of paying close attention to any deviation from the main pattern of reporting. Such rigour not only allows researchers to test their assumptions, but can also offer additional insights. The few occasions when journalists adopted a more critical approach to the word 'hope' is a case in point. The word 'hope' is only questioned, in passing, on two occasions in the press coverage within our sample. An editorial in *The Times* mentions, 'exaggerated hopes' (17 August 2000) and the *Guardian* reports that: 'She [public health minister] stressed that there was no guarantee of early results, but there was hope - 'false hopes' critics predicted' (20 December 2000). The only other example we came across of press reporting which questioned the notion of hope was in an article we excluded from our sample because it was about *adult* stem cell research, not *embryo* stem cell research. Noting the way in which hope was treated in this article is none-the-less highly instructive. At this crucial point in time it was vital not only to encourage belief in the possibilities opened up by embryo stem cells but also to deny the potential of adult stem cells, as otherwise the research on embryos might be seen as unnecessary. Anti-hype can, at certain times, be as important as hype in promoting particular scientific agendas. The very title of the article about adult stem cell research begins by questioning the hope it might offer ('Tantalising dream of a drug-free cure') and final words of the article conclude by declaring 'All these hopes, however, remain just that – hopes' (*Guardian* 17 August 2000). Just as the term 'only potential' is used to deconstruct the notion of the embryo as a potential human being, so here the term 'just hope' is used to undermine the argument that adult stem cell research might be a good future source of therapies.

Before concluding our discussion of hope, we should also highlight one other exception to the dominant use of this term – one which appeared in the TV news coverage. A lengthy item on *Channel 4 Evening News* (16 August 2000) began to explore the whole notion of the imperative to hope. In this item an interview with Christopher Reeve (a key promoter of stem cell research and 'the power of hope') is used in a rather unusual way. The interviewer questions Reeve about a controversial advertisement supporting further stem cell research which showed Reeve walking (a visual fantasy made possible by digital manipulation of his image). Reeve is challenged about the dangers of creating false hope and is drawn into a brief discussion of the double-edged nature of the concept for many people living with disability. This item illustrates the possibility of a different style of discussion, but one which was marginalised in the bulk of the coverage.

Discussion and conclusion

This chapter has analysed how two opposing discourses were projected in the media to assert competing visions of embryo stem cell research. Our research shows that, as other commentators have noted, there is a great deal more to 'science reporting' than simply communicating scientific facts. The real battleground is about the plausibility of diverse visions of utopia and dystopia and

about who can claim the authority (in terms of both morality and expertise) to produce a credible version of the future. The chapter has highlighted some of the rhetorical strategies used in this controversy and examined how the pro-Donaldson perspective sought to characterise itself, and came to be characterised by most journalists, as ultimately more legitimate than the alternative, anti-Donaldson perspective because it was associated with the right sort of people and values.

This chapter contributes to the sociology of expectations and to theories about risk society by offering a case study showing how contrasting representations of the future are promoted in relation to stem cell research. Brown and Michael argue that there has been a recent shift towards a new 'institutional body language for science', which calls for alternatives to 'expert', detached authority.¹⁷ Our analysis shows how, although the proponents in our study did continue to draw on discourses of authoritative, expert knowledge, this was carefully set within a compassionate framework. The stem cell example also illustrates the argument by Brown and Michael, that this new science language promotes the rhetoric of transparency and appears to invite 'the public' to take part in the decision making process. Our analysis allows us to reflect on the extent to which the media provides an avenue for open debate – an issue relevant both to the sociology of expectations and to Beck's appeals for the media to act as 'cultural eyes'. However, we would argue that although the release of the Donaldson report was apparently engineered to facilitate debate prior to the parliamentary vote, the debate was inadequate. Journalists were inconsistent in their willingness to deconstruct and question key terms and presented the debate as a strict binary opposition with little room for ambivalence or 'cautious optimism'. In addition there were key themes missing from the debate. These include the absence of feminist critiques (e.g. concern about women as the source of embryos) and the lack of debate about potential health risks or reflection on the present therapeutic gap.

In part the media were simply mirroring the nature of the debate as it played out in the parliamentary and lobbying process. However, existing studies of media production processes, combined with reflection on what we could observe from the content analysis, also give some clues about the media's limitations as an avenue for this sort of risk debate. The oppositional way in which the news media frame issues as two-sided controversies does not help to break through binary oppositions and may exclude people who fail to offer up 'black or white' positions. A lack of questioning of assertions from scientists may be encouraged by the fact that health and science journalists are often predisposed to accept an optimistic scientific agenda¹⁸ and the financial interest of scientists may be seen as non-news by journalists, because these interests are so common place.

In particular we wish to highlight the way in which news formats and production cycles mean there is often a lack of time and space to explore more nuanced debates. Journalists' familiarity (or lack of familiarity) with diverse perspectives also influences their lines of questioning. The exceptional example of an interview with Christopher Reeve exploring the problems of 'hope', gives telling insight into the conditions under which more original reporting might be produced. This exchange occurred within a much lengthier format than is usual within news

bulletins. It is noteworthy that the interviewer in this case was also a wheel chair user.

In conclusion, we 'hope' that our analysis has contributed to debates about the future are played out in the public domain. The issue of how the future is framed is, perhaps, one of the most important areas of contemporary debate within STS, sociology of health and illness and media studies. Although news reporting is often tied to news events and what journalists see as 'topical', this does not mean that it has nothing to say about the future. Although the bulk of coverage of stem cell research in 2000 is firmly tied to on-the-ground events within the surrounding few days, the true focus is on years, even decades ahead. Close attention to how images of the future are constructed in news reporting is, we would suggest, a vital area of research as we seek to understand the construction of scientific and medical developments and policy.

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