

Volume 7, Issue 2, August 2010

STEM CELL RESEARCH IN THE NEWS: MORE THAN A MORAL STATUS DEBATE?

Christen Rachul,^{} Amy Zarzeczny,^{*} Tania Bubela[♦] and Timothy Caulfield[♦]*

Abstract

The interest and controversy generated by stem cell research over the past decade has raised hopes for scientific breakthroughs and debates regarding the limits of ethical research. In particular, the debate surrounding the moral status of the embryo has received considerable attention in scientific and political arenas. However, coverage in the public arena of the elite press is less clear. We explore and reflect on the coverage of this debate in the public realm of the elite press in the United States, the United Kingdom, and Canada, by examining newspaper articles from each jurisdiction collected over a period of two decades.

DOI: 10.2966/scrip.070210.311



© Christen Rachul, Amy Zarzeczny, Tania Bubela and Timothy Calufield 2010. This work is licensed under a [Creative Commons Licence](#). Please click on the link to read the terms and conditions.

^{*} Research Associate, Health Law Institute, University of Alberta, Edmonton.

^{*} Research Associate, Health Law Institute, University of Alberta, Edmonton.

[♦] Assistant Professor, Department of Public Health Sciences, School of Public Health, University of Alberta, Edmonton.

[♦] Canada Research Chair in Health Law and Policy, Professor, Faculty of Law and School of Public Health, Research Director, Health Law Institute, University of Alberta, Edmonton.

1. Introduction

The field of stem cell research has had a varied and turbulent history around the globe. For some, including scientists and clinicians, it heralds an exciting era of discovery and the potential to answer complex questions about human development and disease. For others, including patients and their loved ones, it represents the last hope in often desperate circumstances. For yet others, it engages and challenges deeply held beliefs regarding the point at which human life begins and boundaries of acceptable research. Indeed, few areas of science have been the subject of the same degrees of both accolade and controversy as has stem cell research.¹

In many jurisdictions, the most contentious and enduring source of controversy surrounding stem cell research has centred on the degree to which human embryos have a moral status that entitles them to protection from destruction.² This issue of course centres on debates regarding human embryonic stem cell research, which is by no means the only promising area of research within this dynamic field.³ Nonetheless, human embryonic stem cell research is considered by many to be the “gold standard” for stem cell research⁴ and, as such, continues to be highly relevant to the continuing development of this field. The moral status of the embryo issue also has broad implications for other types of stem cell research, since much of the current debate focuses on privileging funding for alternative sources of stem cells, such as adult stem cells and induced pluripotent stem (iPS) cells.

¹ A Zarzeczny and T Caulfield, “Emerging Ethical, Legal and Social Issues Associated with Stem Cell Research and the Current Role of the Moral Status of the Embryo” (2009) 5(2) *Stem Cell Reviews and Reports* 96-101; M Nisbet, D Brossard and A Kroepsch, “Framing Science: The Stem Cell Controversy in an Age of Press/Politics” (2003) 8 *The Harvard International Journal of Press/Politics* 36-70.

² For a background on the different perspectives underlying this issue, see BM Knoppers, S Bordet and R Isasi, “The Human Embryo: Ethical and Legal Aspects” in J Lafond and C Vaillancourt (eds), *Human Embryogenesis: Methods and Protocols* (Totowa, NJ: Humana Press, 2009) 281-305; T Bubela and T Caulfield, “When Human Dignity is Not Enough: Embryonic Stem Cell Research and Human Cloning in Canada” in E Einsiedel (ed), *Emerging Technologies: Hindsight and foresight* (Vancouver: UBC Press, 2009) 160-182. For further examples, see J Deckers, “Why Current UK Legislation on Embryo Research is Immoral. How the Argument from Lack of Qualities and the Argument from Potentiality Have Been Applied and Why They Should Be Rejected” (2005) 19(3) *Bioethics* 251-257 and K Devolder, “Creating and Sacrificing Embryos for Stem Cells” (2005) 31 *Journal of Medical Ethics* 366-370. See also Steering Committee on Bioethics (CDBI), “The Protection of the Human Embryo In Vitro”, *Report by the Council of Europe’s Working Party on the Protection of the Human Embryo and Fetus (CDBI-CO-GT3)* (Strasbourg, 19 Jun 2003) available at [http://www.coe.int/t/dg3/healthbioethic/texts_and_documents/CDBI-CO-GT3\(2003\)13E.pdf](http://www.coe.int/t/dg3/healthbioethic/texts_and_documents/CDBI-CO-GT3(2003)13E.pdf) (accessed 11 Mar 2010). For a review of different national responses to this issue, see R Isasi and BM Knoppers, “Mind the Gap: Policy Approaches to Embryonic Stem Cell and Cloning Research in 50 Countries” (2006) 13 *European Journal of Health Law* 9-26.

³ There are a number of different sources of stem cell that do not involve the destruction of human embryos; for example, induced pluripotent stem cells, somatic cell nuclear transfer, parthenogenesis and stem cells derived from isolated blastomeres. For a lay person explanation of the foregoing, see U Ogbogu and P Rugg-Gunn, “The Legal Status of Novel Stem Cell Technologies in Canada” (2008) 5 *Journal of International Biotechnology Law* 186-199; see also BM Knoppers, S Bordet and R Isasi, see note 2 above.

⁴ A Gawrylewski, “Embryonic Stem Cells Still Gold Standard” (2008) available at <http://www.the-scientist.com/blog/display/54749/> (accessed 9 Mar 2010).

One key question that emerges in this context is the degree to which the debate regarding the moral status of the embryo in relation to stem cell research has permeated major public fora where such issues are deliberated. The role of the media in shaping different aspects of the human embryonic stem cell research debate has been recognised and examined.⁵ There is little doubt that media coverage can impact the nature and tone of both policy deliberations and, to some degree, public views.⁶ Although the relationship between the media and public opinion is unquestionably complex,⁷ at a minimum, the media can be an important source of information. A recent study of the Canadian public, for instance, found that most individuals had “heard of stem cell research primarily through the media”.⁸

In this brief comment, we reflect on the coverage the moral status of the embryo issue has received in samples of the elite press from Canada, the United States (US) and the United Kingdom (UK) over the last twenty years. We compare the coverage of this issue to other key areas of focus in stem cell research discourse and consider what story emerges from the patterns observed. Our aim is not to provide a history of the development of the moral status issue or to present a comprehensive analysis of its role within popular discourse or public consciousness generally. Rather, we consider the traction that this seemingly pivotal issue has received over time in one particular and highly instructive forum – the elite press.

2. Approach

While there are various measures and metrics available to probe aspects of popular discourse, public opinion and policy development, the important role the media and popular press play in framing issues of science, and their potential impact on both public opinion and policy making, is increasingly recognised.⁹ While there is debate about the diminishing role of mainstream media sources, there is little doubt that the elite press plays a role in agenda setting.¹⁰ Our focus on the elite press is in line with comparable media studies of stem cell research and reflects the fact that “[s]tories

⁵ C Williams, J Kitzinger and L Henderson, “Envisaging the Embryo in Stem Cell Research: Rhetorical Strategies and Media Reporting of Ethical Debates” (2003) 25 *Sociology of Health and Illness* 793-814; M Nisbet, D Brossard and A Kroepsch, see note 1 above.

⁶ R Holliman, “Media Coverage of Cloning: A Study of Media Content, Production and Reception” (2004) 13 *Public Understanding of Science* 107-130.

⁷ TA Ten Eyck, “The Media and the Public Opinion on Genetics and Biotechnology: Mirrors, Windows, or Walls?” (2005) 14 *Public Understanding of Science* 305-316; T Bubela et al, “Science Communication Reconsidered: Challenges, Prospects, and Recommendations” (2009) 27 *Nature Biotechnology* 514-518.

⁸ E Einsiedel et al, “Diversity in Public Views toward Stem Cell Sources and Policies” (2009) 5(2) *Stem Cell Reviews and Reports* 102-107, at 103.

⁹ M Nisbet, D Brossard and A Kroepsch, see note 1 above; see also S Priest and T Eyck, “News Coverage of Biotechnology Debates” (2003) *Society* 29-34.; see also M Nisbet and B Lewenstein, “Biotechnology and the American Media: The Policy Process and the Elite Press” (2002) 23 *Science Communication* 359-391; for an examination of the impact of media representations on views of the general public and members of patient groups likely to benefit from the research, see V Peddie et al, “‘Not Taken in by Media Hype’: How Potential Donors, Recipients and Members of the General Public Perceive Stem Cell Research” (2009) 24(5) *Human Reproduction* 1106-1113.

¹⁰ For a review see T Bubela et al, see note 7 above.

tend to spread vertically within the news hierarchy, with editors at regional news outlets often deferring to elite newspapers and newswires to set the news agenda”.¹¹

As part of a larger objective to examine the nature of how stem cell research has been presented in the elite press since research in this area gained momentum, we collected all articles published on stem cell research in *The Globe and Mail* (Canada), *The New York Times* (US) and *The Times* (London, UK). We used the Lexis/Nexis (for *The New York Times* and *The Times*) and Factiva (for *The Globe and Mail*) databases to search for the phrase “stem cell research” with no date restrictions. We collected 1811 relevant articles, dating from December 1991 until May 2009. Note in all figures, therefore, that 2009 reflects only a partial year and thus no conclusions may be drawn about the extent of coverage for the complete year of 2009 relative to other years. Undergraduate research assistants, representative of an informed but non-specialist reader of the elite press, coded the articles for a number of points including the main issue(s) addressed and the tone of the article. Each article was coded for up to three main issues.

In this paper, we reflect on how ethical issues, including the moral status of the embryo, have been addressed over time in these samples of the elite press in Canada, the US and the UK. This examination is particularly worthwhile given the history and importance of the moral status issue to the overall stem cell research debate and subsequent development of the field, including its policy and regulatory landscape.¹² We first explore the focus given to the broad category of ethics issues, of which we found the moral status of the embryo to be the dominant issue, in comparison to that given to other key issues in the stem cell research field. We then examine the prevalence of the moral status issue in each of the three newspapers over time. Finally, we investigate the prevalence of the moral status issue in relation to other ethics issues. We conclude by reflecting on what the emerging patterns and trends suggest about the overall treatment of stem cell research issues, including the moral status of the embryo, in the elite press.

3. Discussion

3.1 Overall Coverage of Stem Cell Research

The first coverage of stem cell research from our sample appeared in 1991, but coverage was very minimal between 1991 and 1998.¹³ Stem cell research in general

¹¹ M Nisbet, D Brossard and A Kroepsch, see note 1 above, at 47; citing T Gitlin, *The Whole World is Watching: Mass Media in the Making and Unmaking of the New Left* (Berkeley: University of California Press, 1980) and E Rogers, J Dearing and S Chang, “AIDS in the 1980s: The Agenda-Setting Process of a Public Issue (1991) *Journalism Monographs* 126.

¹² For an example from each of the jurisdictions studied, see T Caulfield and T Bubela, “Why a Criminal Ban? Analyzing the Arguments Against Somatic Cell Nuclear Transfer in the Canadian Parliamentary Debate” (2007) 7(2) *American Journal of Bioethics* 51-61; The President’s Council on Bioethics, *Monitoring Stem Cell Research: A Report of the President’s Council on Bioethics* (2004) available at http://www.bioethics.gov/reports/stemcell/pcbe_final_version_monitoring_stem_cell_research.pdf (accessed 11 Mar 2010); Nuffield Council on Bioethics, *Stem Cell Therapy: The Ethical Issues – A Discussion Paper* (Apr 2000) available at http://www.nuffieldbioethics.org/fileLibrary/doc/stem_cell_therapy2.doc (accessed 11 Mar 2010).

¹³ Accordingly, we have focused our reflections on the data from this point in time forward.

began to receive more attention after that point, which is not surprising given that the first research results outlining the derivation of a human embryonic stem cell line were published at the end of 1998.¹⁴ In many ways, this moment marked the beginning of a new era in stem cell research. However, as evidenced in Figure 1, the degree of coverage that stem cell research has received in the elite press has been far from consistent over time, or between jurisdictions.

Most notably, coverage in *The New York Times* reveals a number of years during which there was a marked increase in the number of articles published on the topic of stem cell research. In particular, 2001, 2004, 2005 and 2006 reveal significantly more coverage of this topic than is apparent in other years. These periods of increased focus in the US were clustered around key moments in American stem cell research history: first, the US debates surrounding embryonic stem cell research that culminated in President Bush's 2001 Directive limiting the use of federal funds for stem cell research,¹⁵ and second, with the similar discourse that emerged during and following his second election at the end of 2004.¹⁶

In contrast, there was no similar spike in coverage coinciding with President Obama's Executive Order, signed 9 March 2009, reversing President Bush's Directive.¹⁷ We may speculate on the reasons for this. First, the reversal was a well articulated election position for President Obama. Second, *The New York Times* coverage was generally supportive of human embryonic stem cell research and therefore the Bush moratorium may have been more controversial and hence received more coverage than its reversal. Third, the emergence of iPS cell technologies may have diffused some of the ethical concerns associated with stem cell research more broadly. Fourth, the American public was more focused on economic issues during the 2009 period, in light of the world-wide economic crisis; and finally, some state governments (e.g. California) had moved to fund human embryonic stem cell research with public support for this type of research, making the federal funding issue less significant. In other words, supporting human embryonic stem cell research was not big news in many parts of the country.

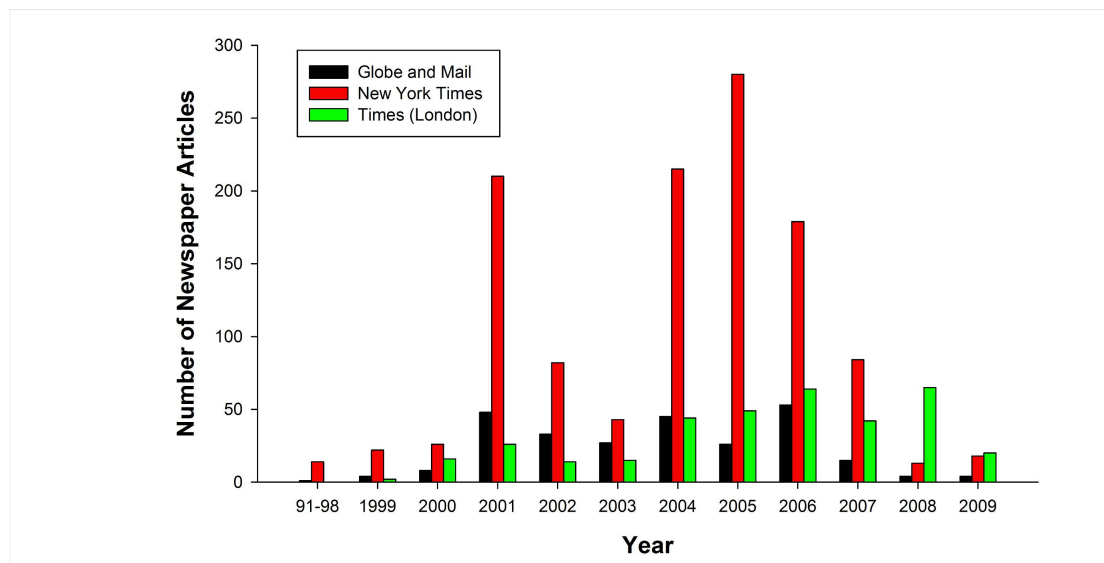
Neither the Canadian nor the British data reveal such dramatic spikes in the overall level of reporting on stem cell research. As compared to the US, the elite press in these jurisdictions appear to have been relatively consistent in their coverage of this topic (see Figure 1, below). However, small spikes were apparent in Canada in 2001 and 2004 that were also related to coverage of the Bush policies.

¹⁴ J Thomson et al, "Embryonic Stem Cell Lines Derived from Human Blastocysts" (1998) 282(5391) *Science* 1145-1147.

¹⁵ The text of President Bush's August 2001 address on stem cell research is available on CNN at <http://edition.cnn.com/2001/ALLPOLITICS/08/09/bush.transcript/index.html> (accessed 11 Mar 2010). See also note 1 above, where M Nisbet, D Brossard and A Kroepsch identify 2001 as a general period when resistance to hESCR from pro-life interests and policy makers rose "to the top of the U.S. political agenda", at 37.

¹⁶ For example, see J Randerson, "The US Battle over Stem Cells" (6 Oct 2004) available at <http://www.newscientist.com/article/dn6486-the-us-battle-over-stem-cells.html> (accessed 11 March 2010).

¹⁷ Executive Order 13505 of March 9, 2009, Federal Register Vol. 74, No. 46 (11 Mar 2009) available at <http://edocket.access.gpo.gov/2009/pdf/E9-5441.pdf> (accessed 11 March 2010).

Figure 1: Coverage of Stem Cell Research Each Year in Each Paper

3.2 Issues Covered

Articles about stem cell research in the three newspapers covered a wide range of issues. As noted, we coded for up to three major issues per newspaper article, meaning each article could be classified as covering more than one issue. We grouped the various issues raised into the following five main categories: legal/political/public accountability (e.g. stories about legal restrictions on stem cell research, political developments, public and stakeholder involvement in policy-making debates, etc.);¹⁸ ethics (e.g. stories about protecting animal welfare in medical research, informed consent, moral status of the embryo, etc.);¹⁹ research (e.g. stories about research breakthroughs and developments, therapeutic potential, etc.);²⁰ economic/commercialisation (e.g. stories about industry participation in research, patenting, etc.)²¹ and “other” (e.g. personal interest stories, celebrity factors, etc.).²²

As is evident in Figure 2 (a-c), ethics issues received comparably less focus over time in all three papers than other issues (please note scale differences for each figure). In all three jurisdictions, issues falling in the legal/political/public accountability category received the most focus, followed by issues in the “other” category. Research issues also received their fair share of attention in each sample.

¹⁸ For example, “Listen Up Canada; Government Policy is Out of Whack with the Demands of Young Canadians” (2 Jul 2003) *The Globe and Mail*.

¹⁹ For example, “Pro-Life, After Birth” (6 Dec 2004) *The New York Times* C1.

²⁰ For example, “Blood from Placenta Can Aid Leukemia Patients, Scientists Say” (24 Mar 1996) *The New York Times* A1.

²¹ For example, “Another Stem Cell Debate; Ethics Aside, a Good Business Model Remains Elusive” (28 Jul 2001) *The New York Times* C2.

²² For example, “Reeve’s Optimism Renewed in Israel” (1 Aug 2003) *The Globe and Mail*.

Figure 2(a): Frequency of Topics Each Year in *The Globe and Mail*

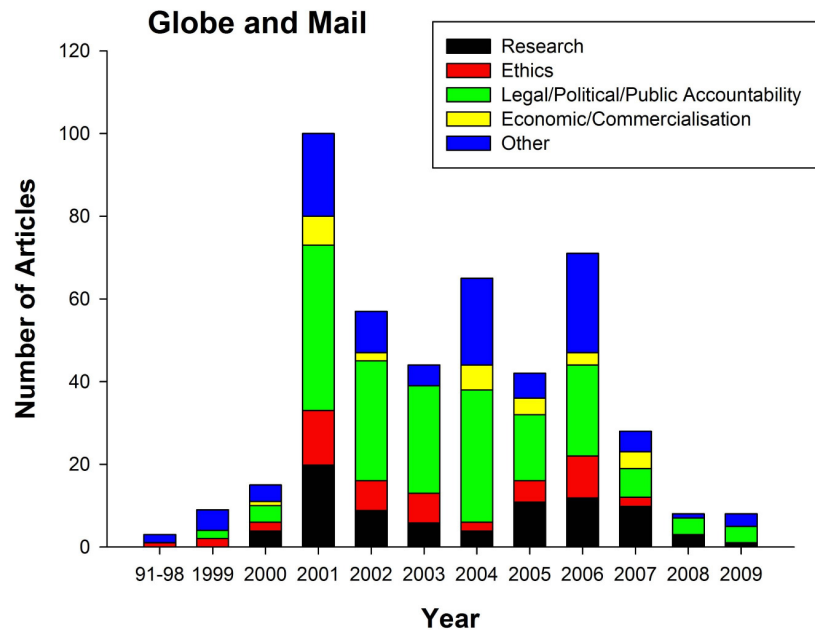


Figure 2(b): Frequency of Topics Each Year in *The New York Times*

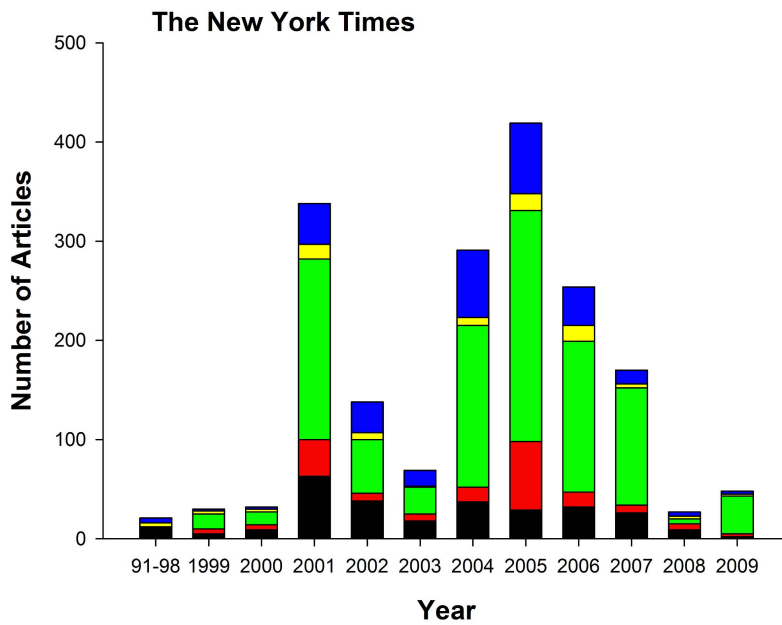
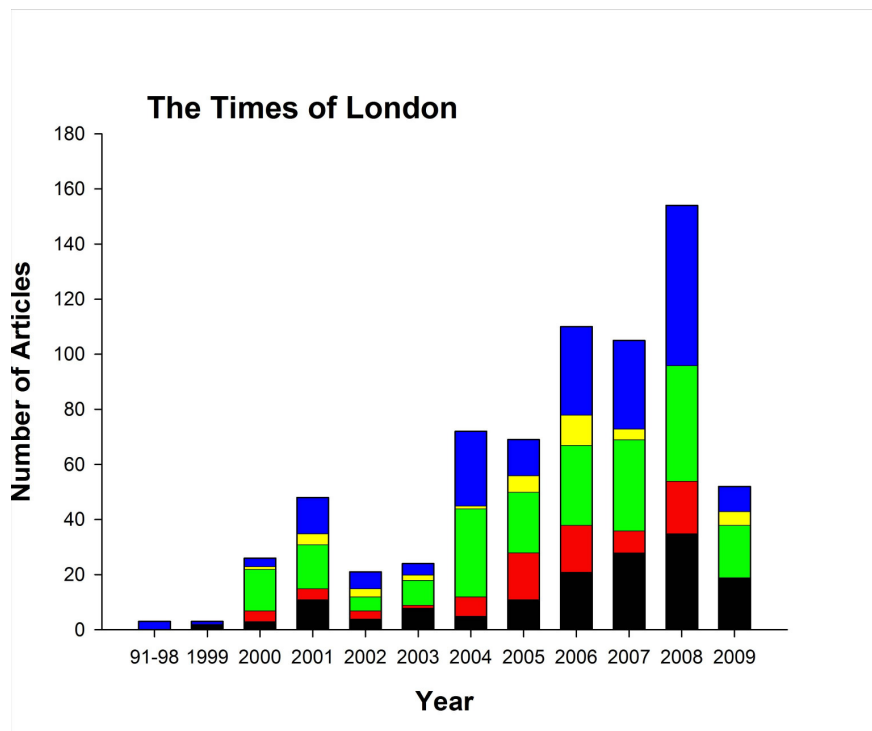


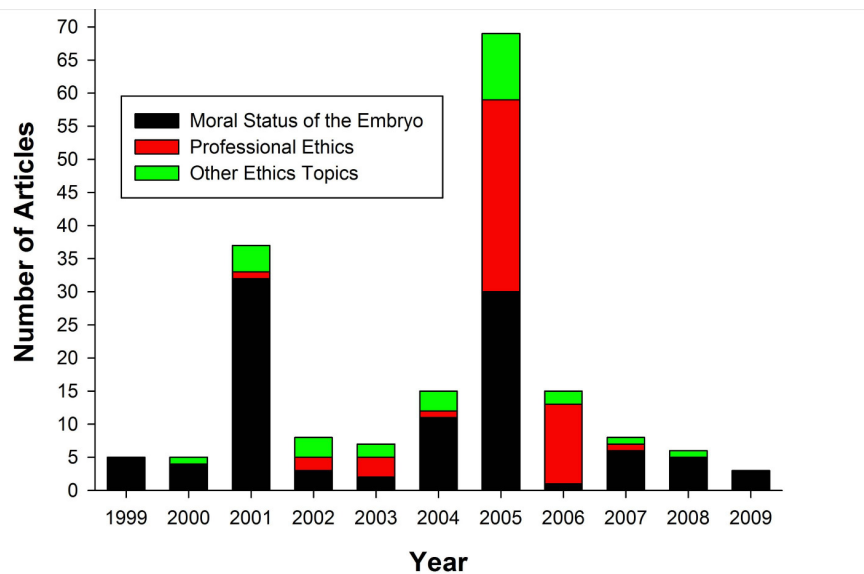
Figure 2(c): Frequency of Topics Each Year in *The Times* (London)

The above data suggest that, while ethics issues are prevalent through the stem cell research coverage over time from each jurisdiction, they generally have not dominated the coverage in the elite press. Rather, they have consistently played a measurable, but secondary role in the debate. The overall prominence of legal/political/public accountability issues further indicates a trend towards direct or factual reporting of political events in the absence of ethical context. That is, while the numbers suggest that some stories about legal, political or public action in the stem cell arena were accompanied by discussions of associated ethical issues;²³ in other cases the ethical reasoning for the political position or action was not discussed.

3.3 Coverage of the Moral Status of the Embryo

The next issue we addressed was the level of coverage the moral status of the embryo issue received as compared to coverage of other ethical topics. A wide range of issues fell within this broader ethics category, but perhaps unsurprisingly the moral status of the embryo was the most prominent ethical issue in each jurisdiction. However, other interesting patterns also emerged. For example, Figure 3 shows the prevalence of the moral status issue over time in *The New York Times*, in relation to other ethics issues. The two dominant ethics issues were professional ethics and the moral status of the embryo. We grouped other minor ethics issues into a single category which included egg donation, autonomy, conflicts of interest, commodification, dignity, animal welfare and informed consent (both for embryo donors and egg donors).

²³ E.g. S Stolberg, "The Nation: Morality and Medicine; Reconsidering Embryo Research" (1 July 2001) *The New York Times*.

Figure 3: Frequency of Ethics Topics Each Year in *The New York Times*

In 2004-2005, there was a marked increase in the number of articles in *The New York Times* dealing with issues of professional ethics (Figure 3). The majority of these articles discussed the major controversy in Korea of Dr Woo-Suk Hwang, which began in 2004 when Dr Hwang published research detailing not only the first successful cloning of a human blastocyst, but also the first successful derivation of stem cells from a cloned embryo. Over the next couple of years, these results were subsequently discredited and the published papers retracted. Further, Dr Hwang's research methods were challenged on an ethical basis once it came to light that he had used oocytes (eggs) that had been paid for, and others donated by junior researchers on his team (when the voluntariness of those donations was highly questionable). These events spurred international consideration of various research ethics issues, from how to avoid similar fraud and misconduct in the future, to how to protect potentially vulnerable research participants.²⁴ It is this discussion that we see reflected in the professional ethics stories published in *The New York Times* over the above period.

In comparison, the overall prominence of the moral status topic remained comparably steady in the Canadian and UK samples, averaging 29.4% and 37.7% of all ethics topics respectively. In *The Globe and Mail*, moral status of the embryo was the dominant ethics issue discussed in 2001-2003, but in 2006 the coverage was equally concerned with the Korean controversy discussed above. It is also interesting in the Canadian context that, despite the moral status of the embryo having been a dominant theme in the parliamentary debates surrounding the development of Canada's governing legislation, the *Assisted Human Reproduction Act 2004*, ch 2,²⁵ this parliamentary focus was not reflected in the coverage in *The Globe and Mail*. It

²⁴ For a discussion of the controversy, see R Saunders and J Savulescu, "Research Ethics and Lessons from Hwanggate: What Can We Learn from the Korean Cloning Fraud?" (2008) 34 *Journal of Medical Ethics* 214-221.

²⁵ T Caulfield and T Bubela, see note 12 above.

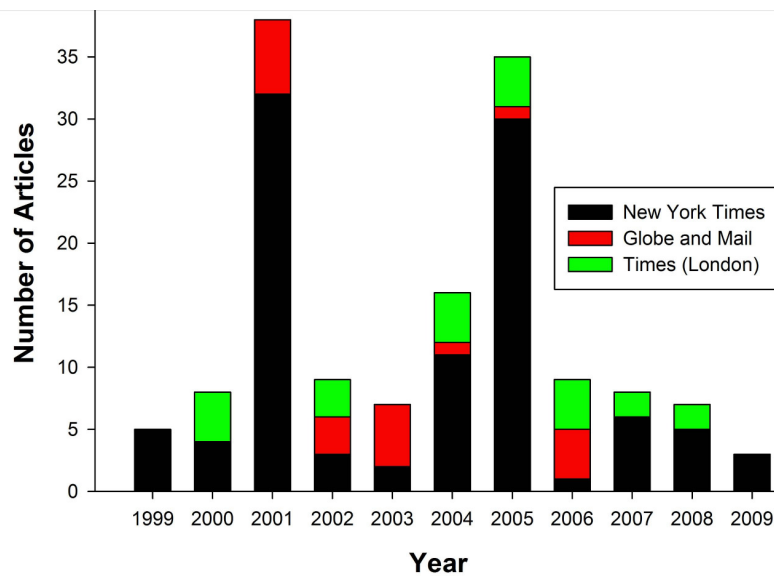
would be interesting to compare the coverage of the development of the legislation in a broader spectrum of Canadian newspapers, especially among newspapers known to support different parts of the political spectrum. It may be that the moral status of the embryo received more traction in the conservative press.

Indeed, as shown in Figure 4, only 7.5% of articles in *The Globe and Mail* addressed the moral status of the embryo, and there were only minimal fluctuations in the amount of coverage over time, with coverage dropping off completely after 2006. This supports the conclusions of Zarzeczny and Caulfield,²⁶ who found that 86.3% of a sample of Canadian print media discourse addressing stem cell research published in 2007 and 2008 focused on considerations other than the moral status of the embryo. Thus, while the moral status issue has an unquestionable presence in Canada's elite press, it is clearly not the dominant topic receiving attention.

Similarly, in *The Times* (London), the moral status of the embryo, while being one of the most consistently addressed ethical issues, was covered in only 6.4% of all articles concerning stem cell research (Figure 4). The UK data revealed a similar spike in coverage of ethics issues (mainly professional ethics) to that which occurred in the US over the Korean scandal. However, in the UK sample there was also a spike in 2008 in the number of articles addressing conflicts of interest and informed consent of embryo donors. These were linked to coverage of the proposed Human Fertilisation and Embryology Bill being debated in parliament at the time. This bill reflected significant amendments to the *Human Fertilisation and Embryology Act 1990*, which regulated, among other things, the use of human gametes and the creation and use of embryos outside the human body. The bill, now the *Human Fertilisation and Embryology Act 2008*, made a number of significant changes including permitting and regulating the use of human-admixed embryos (created from a combination of human and animal genetic material) for research, and recognising same sex couples as the legal parents of children conceived using donated sperm, eggs or embryos, among others. These issues, among others (e.g. replacing the reference to "need for a father" when considering the welfare of the child, to "the need for supportive parenting"), were the subject of considerable debate, as reflected in the relevant coverage from *The Times*.

²⁶ A Zarzeczny and T Caulfield, see note 1 above.

Figure 4: Prevalence of the Moral Status of the Embryo Issue in Relevant Articles Each Year in Each Newspaper



In summary, the data from the three jurisdictions show a complex and idiosyncratic pattern of coverage of the ethics of stem cell research (Figure 4). The moral status of the embryo was addressed in each jurisdiction, but it received far more traction in the US than it did in either Canada or the UK. Not surprisingly, there were spikes in US coverage during 2001 and 2004 that corresponded to overall increases in the coverage of stem cell research during those years. However, in all three jurisdictions, the moral status of the embryo was only one of the ethics issues addressed. Further, its coverage coincided with broader political events and was matched or surpassed in prominence by other topics, depending on the larger story. Some of the key larger stories included the following: coverage of the Bush moratoria on the use of federal funds for derivation of new human embryonic stem cell lines; general political actions and statements regarding stem cell research; events surrounding the Korean controversy; the passage of specific legislation in Canada and the UK that regulated research using embryos; and the emergence of new research models such as iPS cells.

Finally, the matter of tone merits consideration. We coded all articles for tone: negative, positive or neutral. Interestingly, there were no patterns in the tone of the articles overall or within specific publications. While there were small fluctuations in each sample in the numbers of articles with either positive or negative tone, articles with a neutral stance were more common across the board, particularly in more recent years. More specifically, 61.7% of articles in all three newspapers had a neutral tone, while 24.8% had a negative tone and 13.5% had a positive tone. Also, contrary to what one might expect, increases in the amount of coverage received by moral status of the embryo did not appear to coincide with shifts in tone towards either negative or positive. Thus, coverage of stem cell research in these samples of the elite press was primarily balanced and neutral, possibly reflecting the quality of coverage in these newspapers. It is unlikely that the same pattern would be found in other media sources, especially those with more partisan editorial policies.²⁷

²⁷ T Bubela et al, see note 7 above.

4. Conclusion

The issue of the moral status of the embryo within broader stem cell research debates is complex and nuanced. As highlighted here, the moral status of the embryo has unquestionably received attention from the elite press over the last decade. However, it has not dominated discussions about stem cell research in this public forum. Indeed, despite the prominent role the moral status of the embryo has had within political debates and in commentary from the ethics and legal communities,²⁸ it has been addressed in fewer than 10% of the articles about stem cell research appearing in leading newspapers in the US, UK and Canada. Even within the larger US sample, the coverage has generally been more focused on legal and political issues which, in the majority of cases, have been discussed in isolation from ethical issues, including the moral status of the embryo.

Interestingly, these results in many ways reflect themes emerging in public opinion surveys conducted over the same broad time frames in these three jurisdictions. The degree to which the general public is (and has been) focused on, and/or concerned about, the issue of the moral status of the embryo within the broader stem cell research field, remains somewhat unclear.²⁹ However, the general indication is that issues associated with the moral status of the embryo may not necessarily be of widespread concern.

That said, at least a portion of the population remains vigorously opposed to human embryonic stem cell research.³⁰ As these objections are often grounded in religious and moral foundations, the division in opinion over human embryonic stem cell research arguably represents a status quo that will be unlikely to change at any point in the foreseeable future.³¹ In media outlets informed by and targeted towards more socially conservative audiences, the moral status of the embryo is likely a more dominant theme.³²

What does the apparent lack of focus on the moral status issue in the elite press, and potentially among some facets of the public, tell us about the stem cell research landscape? It suggests that, while this issue has certainly played a prominent role in

²⁸ See note 2 above – citing BM Knoppers, S Bordet and R Isasi, 2009; T Bubela and T Caulfield, 2009; J Deckers, 2005, and K Devolder, 2005; CDBI 2003; and R Isasi and BM Knoppers 2006.

²⁹ Canadian Biotechnology Secretariat, *International Public Opinion Research on Emerging Technologies - Canada-US Survey Results*, (Mar 2005); Eurobarometer - Directorate General Research, European Commission, *Social Values, Science and Technology* (Jun 2005); Pew Forum on Religion and Public Life, *Public Makes Distinctions on Genetic Research* (9 Apr 2002); Virginia Commonwealth University Life Science Survey, *Implications of New Discovery Creating Stem Cells from Skin* (2007) available at <http://www.vcu.edu/lifesci/images2/survey2007.pdf> (accessed 26 April 2010).

³⁰ K Hudson, J Scott and R Faden, *Values in Conflict: Public Attitudes on Embryonic Stem Cell Research* (Genetics and Public Policy Centre, 2005) available at <http://www.dnapolicy.org/images/reportpdfs/2005ValuesInConflict.pdf> (accessed 18 Mar 2010).

³¹ For e.g., see DW Brock, “Is a Consensus Possible on Stem Cell Research? Moral and Political Obstacles” (2006) 32 *Journal of Medical Ethics* 36-42.

³² M Nisbet, D Brossard and A Kroepsch, see note 1 above.

various political arenas,³³ this focus has not necessarily been reflected in agenda and issue setting dominant media sources, at the very least, not to the degree one might expect given the broader policy attention paid to this issue. There are of course limitations to the broad conclusions that can be drawn from our data. The selected elite newspapers were likely more inclined to take a nuanced and less controversial approach more broadly supportive of stem cell research. Nonetheless, given the prominent status these newspapers enjoy both nationally and internationally, the potential impact(s) of their messaging should not be unduly minimised.

As the field of stem cell research continues to move into new areas, such as iPS cell technologies, the role of media coverage and public opinion in policy debates about research ethics remains to be seen. Further research should include the expanding role of new and alternative media sources and their impact on both public opinion and the policy-making process.

Acknowledgments

The authors would like to thank Canada's Stem Cell Network for funding this work and the University of Alberta's Health Law Institute for research and administrative support. We would also like to thank Anna Sledziecka, Jared Bachynski and Emily Krauss for collecting and coding the data.

³³ See note 12 above, T Caulfield and T Bubela, 2007; The President's Council on Bioethics, 2004; Nuffield Council on Bioethics, 2000; and see note 2 above, citing BM Knoppers, S Bordet and R Isasi, 2009.