The public debate on the Human Fertilisation and Embryology Bill

A partnership between scientists, clinicians, patient groups and the science media.

The view of a scientist who took part

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Human Admixed Embryos

(a) Cytoplasmic hybrids

(nuclear transfer using enucleated animal eggs and human somatic cells or nuclei)

(b) “True hybrids”

(e.g. combining human sperm with animal eggs)

(c) Transgenic human embryos

(human embryos containing “animal” DNA)

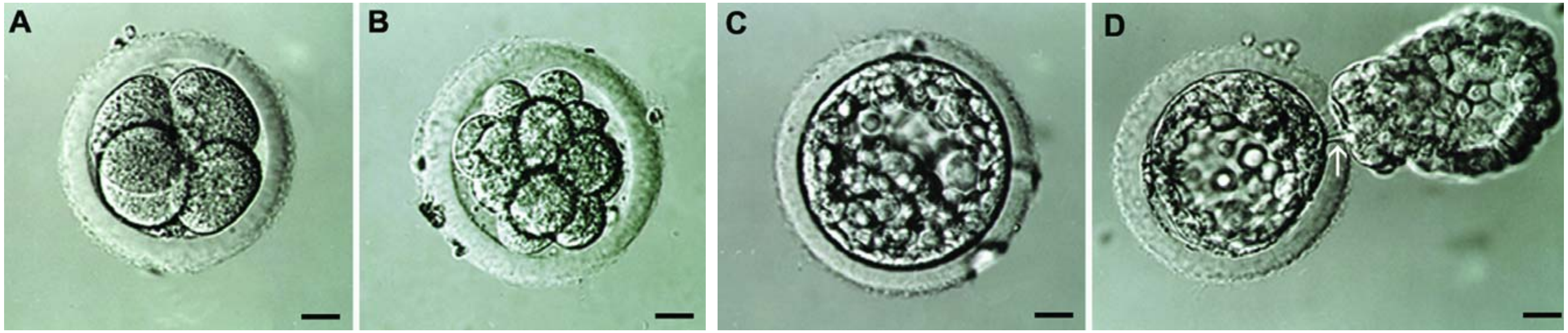
(d) Chimeric human embryos

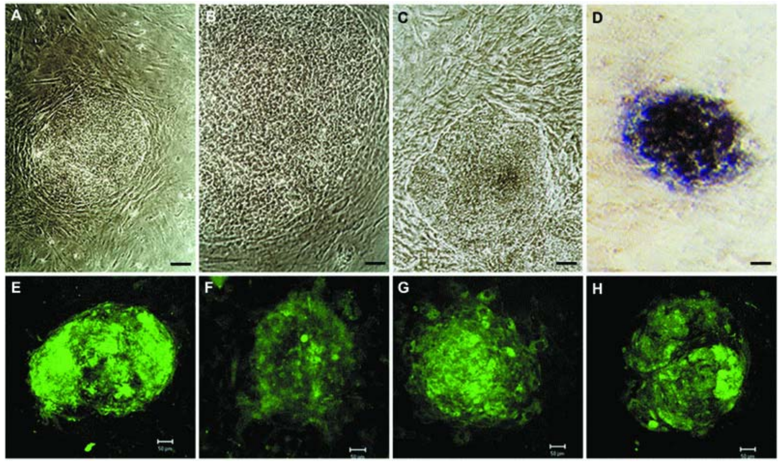
(human embryos containing animal cells or human cells carrying animal DNA)

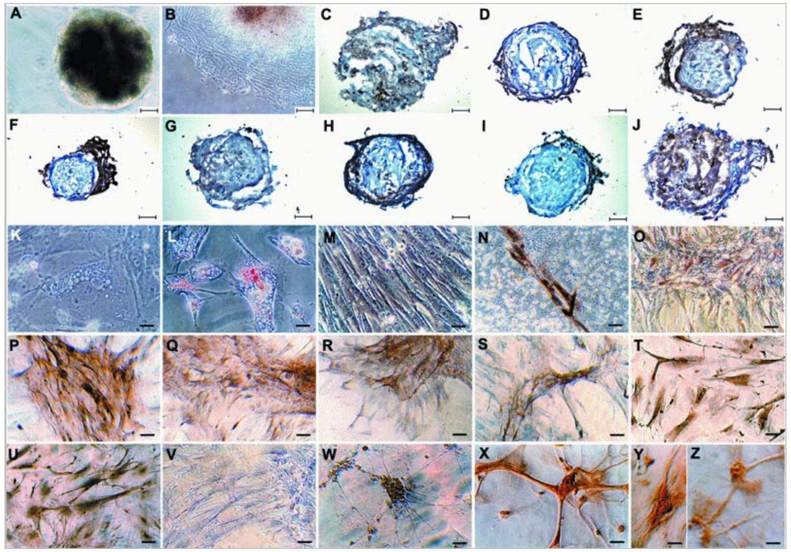
(e) Any other combination involving a human embryo where the animal component does not “predominate”

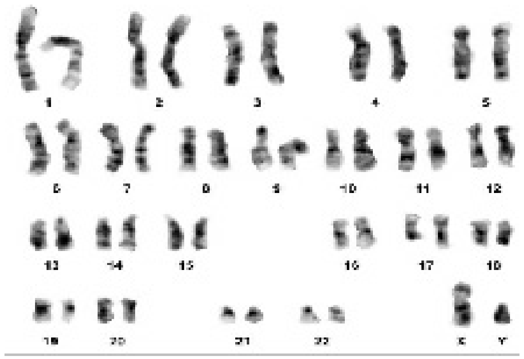
None of these will be “permitted embryos” and therefore they can not be implanted in a woman or animal.

Also, they can not be kept as intact embryos beyond 14 days.









Derivation of Embryonic Stem cells after nuclear transfer of human somatic nuclei into enucleated rabbitoocytes

Hui Zhen Sheng and colleagues. Cell Research 13, 251-264, **2003**

What was it like to discuss controversial research ?

In this case for me the ethics are simple:

I feel that I have a moral imperative to find cures for terrible and debilitating diseases that afflict liveborn children and adults.

If research involving very early human embryos can help us find such cures faster, and if these embryos have been obtained with appropriate consent and have no chance of being implanted for further development (they are surplus to requirements, carry a genetic disease, or have been made by cloning procedures), then I have no problem in saying that the research should be allowed.

It was a challenge to present some difficult concepts, whether they involved complex science or the balance of risks.

- What is a cytoplasmic hybrid ?
- It is better to use animal eggs for cloning experiments rather than human ones, given the risks of egg donation.
- We can never say that any particular method or route in science will prove to be the best in the long term or even in the short term, but if the road is blocked before it is even tried then we will never know.
- Even the knowledge of why something doesn't work can be extremely helpful.
- But if it does work, or it provides a new way of doing something valuable, then this is all for the best.

(It is unlikely that we would have iPS cells if work on human embryonic stem cells had been banned.)

What was done differently ?

1.It was scientists who raised the issues to begin with. They broke the story first (to the media and separately to politicians) as they were concerned that the research should be regulated – not banned, but also not a free-for-all.

2.We organised ourselves early on - knowing that the pro-life groups would do so.

Two groups were formed:

(i) One was set up to anticipate the political challenges. This involved Evan Harris MP, several scientists, clinicians, including those involved with IVF, PGD, etc, and relevant societies representing patients and doctors, etc. All the participants were willing to talk to the media.

(ii) A group of policy teams, with scientific and legal advisors, from the Academy of Medical Sciences, Wellcome Trust, Medical Research Council, Royal Society and sometimes the Association of Medical Research Charities. This provided scientific advice directly to members of both houses of Parliament.

Both groups provided briefing documents and helped to draft amendments when necessary.

3. There was a very good relationship between the scientists and the specialist science media, where both groups already had substantial experience of working with each other, fostered in no small part by the SMC.

   There was a good degree of trust, but also a realisation that some of the scientists had a vested interest and that the journalists needed to write a story and sell it first to their editor and then to the public.

   But I think everyone in this relationship was open and honest.

Some have said it was a campaign. It was, but one with the main aim of avoiding policy being made on the basis of irrational argument. We provided balanced scientific information and opinion based on published facts and received knowledge. This was to all who asked, irrespective of which side of the debate. We also tried to convey an understanding of the scientific method.

Problems:

Editors with no science background publishing conflicting stories !

Problems of balance: 99 versus 1, but the public see 1:1

Artificially polarised debates: e.g. adult versus embryonic stem cells

Hype propagated by commentators

The ridiculous question: “How long before this research leads to a cure ?”

How to encourage other scientists ?

A big stick:

If scientists do not protect the domain in which they work from those who have biased, anti-science views, then the latter will win – at the detriment to progress.

In this case I became involved more because of the ideals than the specifics: we have to leave all doors open - yes, be careful, yes, regulate if this reassures the public, but if we as scientists can't predict which route will lead to cures, it is unlikely that a non-scientist can.

Carrots:

The challenges are enjoyable:

> I thoroughly enjoyed the experience – even though it was at times exhausting ……

THE SCOTSMAN

21 March 2008

THE leader of Scotland's Catholics is to use his Easter sermon to launch a strong attack on latest plans for embryo research.

Cardinal Keith O'Brien, Archbishop of Edinburgh and St Andrews, is expected to say: "One might say that in our country we are about to have a public government endorsement of experiments of Frankenstein proportion without many people realising what is going on.”

The Guardian, Tuesday 25 March 2008

Scientists say Catholic clergy inflaming embryo debate

by Paul Lewis

………. **The Scottish cardinal Keith O'Brien said the bill would allow "grotesque procedures" which would "attack the sanctity and dignity of human life".**

Dr Stephen Minger … said: "You could perceive that they're saying this out of real lack of understanding, or you could be more cynical and say they're doing it to ratchet up tension. I think they're using language that is intentionally inflammatory." He added: "It's offensive to scientists who want to pursue this research …."

Professor Robin Lovell-Badge … said: "Maybe there's an awful lot in the bill that goes against the strict Roman Catholic view and it's not just these mixtures of animal and human they object to. Perhaps they've decided that they're going to focus on this one particular issue because they can use scary language like 'creating monsters' and make ground on this particular battle, when other parts of the bill, like IVF treatment, are well accepted in the UK."

Minger and Lovell-Badge are among six of the UK's leading stem cell scientists who have offered to meet church leaders and Catholic MPs to clarify what the legislation would mean for their work.

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And rewarding: In this case with a major impact on policy and law.

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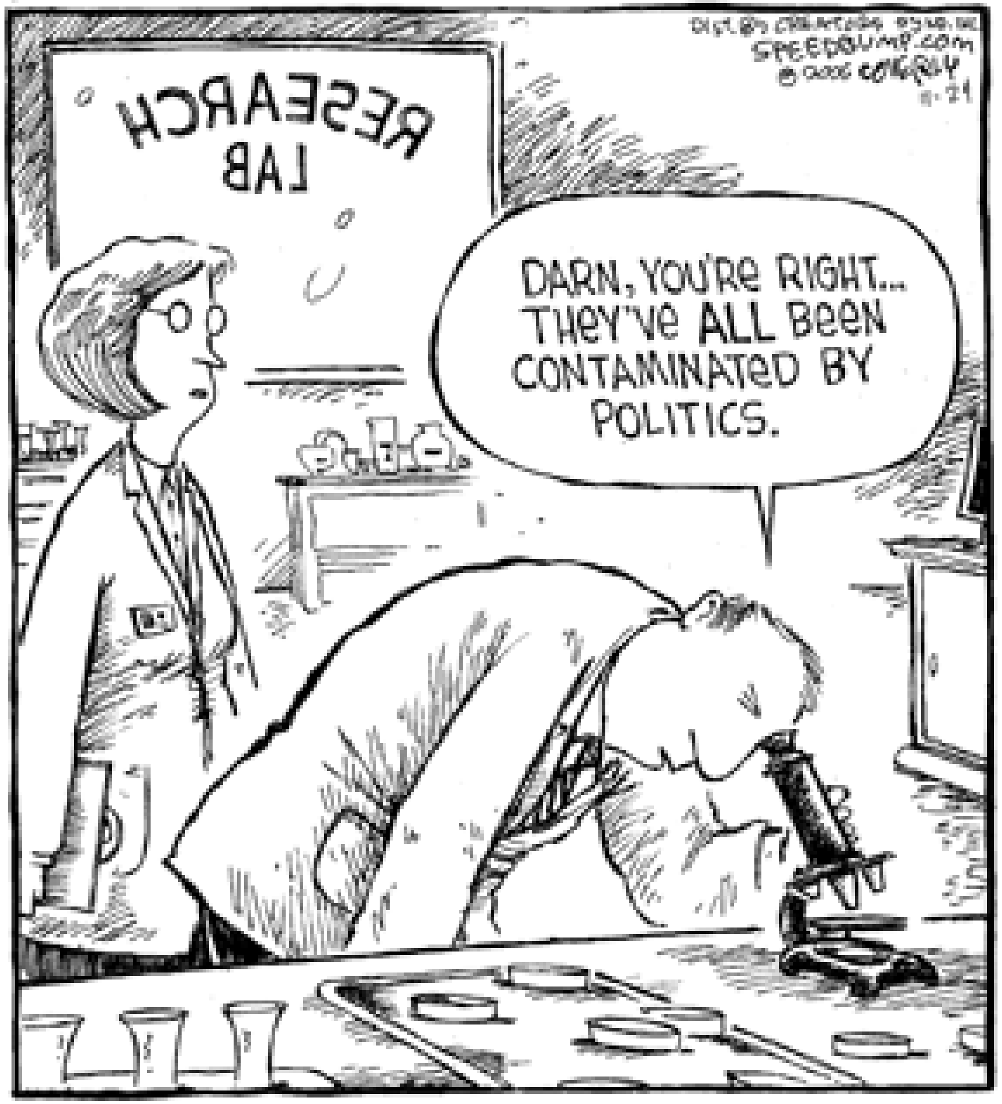
In addition, science journalists are great people with whom to enjoy a beer or two !

SCIENCE POLICY



December 2006
A government White Paper on the Human Fertilisation and Embryology Authority (HFEA) was published. This included proposals to ban the creation of interspecies embryos (mixtures of animal and human material), “unless and until permitted by regulation”.

March 2007
The House of Commons select committee published the report of their enquiry into research on interspecies embryos. This came out strongly in favour of the research.

May 2007
The government issued a draft HFE Bill, which would allow some hybrid embryo research. This was examined by a Joint Scrutiny Committee composed of members of both Houses of Parliament.

June 2007
The Academy of Medical Sciences published their report on interspecies embryos, which considered in detail the scientific and clinical reasons for the research.

August 2007
The Joint Scrutiny Committee published its report. It was broadly in favour of interspecies embryo research and other proposals for research in the draft bill, although it raised several issues that needed to be resolved.

September 2007
The HFEA published the results of a detailed public consultation. 61% of the British public agreed with creating embryos that contain human and animal genetic material for research if it might help to understand serious diseases.

December 2007
The HFE Bill was launched first in the House of Lords, where it received considerable support (a proposed amendment that would have led to a ban on interspecies embryos was defeated by 268 votes to 96).

December–January 2007
Some terminology was changed, notably “human admixed embryos” rather than interspecies embryos.

February 2008
The bill was passed by a substantial majority in the House of Lords.

21 March 2008 – Easter Sunday !!

July 2008
Crucial free votes in the House of Commons were in favour of allowing research with human admixed embryos.

October 2008
MPs voted in favour of a third reading of an amended version of the entire bill by 355 to 159 following the report stage. It returned to the House of Lords where the amendments made in the Commons were agreed on by a very significant majority.

November 2008
The Bill received Royal Assent and was passed into law.