They are moving

Germany has started a broad debate about legalising the use of surplus embryos for biomedical research

Throughout May and June 2001, biology made it to the front pages of German newspapers and news magazines. The research community in Germany, the German government, all political parties, as well as commentators, humanists and other stakeholders are currently engaged in a public debate about the ethical implications of genetic research, in particular about the use of surplus embryos from

a final decision about whether to grant Brüstle's application and is still waiting for a recently established ethics council to give a recommendation.

What eventually started the national debate, however, was not Brüstle's application, but the DFG's response. On May 3, 2001, Ernst-Ludwig Winnacker, Head of the Gene Centre of the University of Munich and President of the DFG,

supports the DFG's recommendation to use surplus embryos for medical research. In a speech given at the German Savings Bank Conference in Munich on May 16, he said that it is moral 'not to restrict our thinking just to the protection of embryos. It is just as moral not to forget the many people with critical illnesses who fear for their lives and are hoping to be cured or to have their conditions alleviated by medicines produced by genetic engineering.' In various interviews, Chancellor Schröder, who does not want to see Germany lose its lead in the rapidly growing European biotechnology industry, also pointed out the economic potential of medical research.

Many biomedical researchers in Germany welcome this discussion, because they think that research using adult stem cells alone will not necessarily produce the same results as work with embryonic stem cells. 'We simply do not know yet if adult stem cells have the same potential with regard to proliferation and differentiation as do embryonic stem cells,' Anna Wobus, a researcher working on mouse embryonic stem cells at the Institute for Plant Genetics and Crop Plant Research in Gatersleben, said.

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The incident that triggered this intense debate was an application to the Deutsche Forschungsgemeinschaft by Oliver Brüstle, a neuropathologist at the University of Bonn, to fund research using human embryonic stem cells. His group, working on the differentiation of stem cells into nerve cells, has already been able to demonstrate—in animal models—the therapeutic potential of this approach for treating severe neurological disorders. Brüstle now wants to transfer his results to human embryonic stem cells, and thus plans to import these cells from Israel, where their production is legal. His work would, in fact, not violate the German law for the protection of the embryo, since this law prohibits only research that would damage an embryo. But it would definitely set a precedent, since human stem cell research in Germany has so far been limited to adult stem cells. In fact, at the time of writing, the DFG has not made

publicly recommended that the German parliament 'allow the allowed', i.e. allow the import of pluripotent stem cell lines from abroad. But Winnacker went even further and said 'If it proves necessary, the DFG suggests as a second step, that Parliament initiate deliberations to make it possible for scientists in Germany to work actively on the production of human embryonic stem cell lines. This possibility must solely refer to embryos that were produced for artificial fertilisation, and that can no longer be used for this

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purpose ("surplus" embryos).' The DFG's recommendation came together with the establishment of a 'National Ethics Council' whose aim is to advise the German government on ethical and moral questions, and of which Winnacker is a member (see sidebar).

Winnacker is backed by none other than Chancellor Gerhard Schröder, who

But if the proponents can be sure of the Chancellor's support, the opponents have found a prominent supporter too. On May 18, in a speech given in Berlin, Federal President Johannes Rau maintained that the first sentence of the German constitution's Basic Law—'Human dignity shall be inviolable'—extends to the fertilised egg, and thus prohibits any use of IVF embryos

Members of the National Ethics Council

Wolfgang van den Daele (Science Centre, Berlin)
 Horst Dreier (University of Würzburg)
 Eve-Marie Engels (University of Tübingen)
 Bishop Gebhard Fürst (Catholic Church)
 Detlev Ganten (Max-Delbrück-Centre, Berlin)
 Volker Gerhardt (Humboldt University, Berlin)
 Bischof Wolfgang Huber (Lutheran Church)
 Regine Kollek (University of Hamburg)
 Cristiane Lohkamp (Deutsche Huntington Hilfe, Stuttgart)
 Therese Neuer-Miebach (Fachhochschule Frankfurt am Main)
 Christiane Nüsslein-Volhard (Max-Planck-Institute, Tübingen)
 Peter Propping (University of Bonn)
 Heinz Putzhammer (German Labour Union)
 Jens Reich (Max-Delbrück-Centre, Berlin)
 Bettina Schöne-Seifert (University of Hannover)
 Richard Schröder (Humboldt University, Berlin)
 Spiros Simitis (University of Frankfurt am Main)
 Lothar Späth (Jenoptik AG)
 Jochen Taupitz (University of Mannheim)
 Kristiane Weber-Hassemer (Supreme State Court, Frankfurt am Main)
 Hans-Jochen Vogel (Social Democratic Politician)
 Ernst-Ludwig Winnacker (Deutsche Forschungsgemeinschaft, Bonn)
 Christiane Woopen (University of Cologne)

for research purposes. 'Not even important objectives of medical research should determine from what point human life should be protected,' he said in his speech.

In contrast to the UK and the USA—at least in terms of private companies—Germany does not plan to create embryos in order to produce stem cells. The DFG, the Chancellor and the Federal Ministry of Education and Research instead plan to use the one hundred or more IVF eggs that have not been implanted and are actually stored in IVF clinics. Many scientists support this approach, as they think that therapeutic cloning will not be necessary. 'I think that a limited number of embryos would be enough to establish embryonic stem cell lines,' Wobus said, adding 'I am against therapeutic cloning.'

However, the 1990 German law for the protection of the embryo prohibits any use of an *in vitro* fertilised egg other than its implantation into the womb for the purpose of establishing pregnancy. Chancellor Schröder and Edelgard Buhlmann, the Minister for Education and Research, thus advocate changing the law in order to allow the use of surplus embryos for biomedical research. Nevertheless, both have made clear that such a decision can only be made after an extended debate

medical research, has already spoken out against any change in the law.

An additional problem is that the discussion about the use of human embryonic stem cells has been merged with the debate about whether to allow pre-implantation diagnostics (PID) for IVF embryos in order to prevent severe inherited diseases. Historically, this procedure has found many opponents in Germany, who like to link PID with Nazi doctors' abuse of eugenics during the Third Reich. Many scientists therefore see

within German society about the benefits and the ethical implications. 'The attitude [of the German government] is that, right now, it is not necessary to change the law for the protection of the embryo,' Bettina Bundszus, a spokesperson for the Minister for Education and Research, said. But these plans are disputed even within the government. Herta Däubler-Gmelin, the Minister of Justice and a strong opponent of using surplus embryos for bio-

clear that they oppose both and will support the Minister of Justice. Even more divided are the Christian Democrats, the main opposition party. Their strong catholic base takes a fundamental stance against stem cell research and PID, although other members of the party—most notably the former Federal President Roman Herzog—have made clear that they would support stem cell research in order to develop new therapies. In fact, when Wolfgang Clement, the Social Democratic governor of Northrhine-Westfalia where Brüstle works, publicly supported the import of stem cells during a visit to Israel in the first week of June, the Christian Democratic party leaders—in what must have been a political reflex—immediately asked for an import ban.

On May 28, the Bundestag devoted a five-hour debate to discussing the future direction of genetic research in Germany. In the end, the legislators agreed on the overall benefit of genetic research in principle, but remained undecided about the use of surplus embryos for medical research. Indeed, some members of parliament conceded that they simply do not know enough yet about the scientific, medical and ethical implications to make a decision.

The outcome of the debate is as yet unclear, but the fact that it has started and it is being carried out on a broad basis is already a step forward. 'Science throws up questions here which concern us all. They need to be discussed at every level of society and settled by political decision—in parliament,' President Rau said in his Berlin speech. It is not clear when the final decision about the use of embryonic stem cells will be made and

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the coupling of stem cell research and PID in the public debate rather negatively. 'I see this as a problem,' Wobus said, 'these are different aspects, different problems. [...] This has nothing to do with the development of new therapies.'

The debate has split the government as well as the political parties in Germany. At the time of writing, the governing Social Democrats had not yet published their position on stem cell research or on PID. But the Green party, their smaller coalition partner, have already made

what the outcome will be, but, given the broad debate in Germany, it will be one that will be backed by the majority of the population.

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