
Cultural biopolitics, bioethics and the moral economy

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Cultural biopolitics, bioethics and the moral economy: the case of human embryonic stem cells and the European Union’s Sixth Framework Programme

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Introduction
On 10th June 2004 the European Commission issued the third call within the ‘Life Sciences, Genomics and Biotechnology for Health’ Priority of its Sixth Framework Programme (FP6 – 2002-06). The designated work programme topics included the functional genomics of human embryonic stem cell differentiation, human stem cells for spinal cord injury, a European human embryonic stem cell registry, and a conference on the state of the art of stem cell research, focusing on the potential and limitations for curing severe diseases, aimed at patients (European Commission, 2004). The issuing of the call was a real and symbolic victory for the proponents of human embryonic stem cell (HESC) research, particularly the UK, following a long and often bitter political conflict spanning the European Commission, the Council of Ministers, the European Parliament, national governments and a host of associated agencies and policy networks. It is not, however, a final victory over the opponents of human embryo research. Nor is it a sure indication of the likely course of the hostilities that are continuing within the confines of the agenda setting exercise for the Seventh Framework Programme commencing in October 2006. The roots of the discord are far too deeply embedded for such a simple resolution to be sustainable.

The struggle within the European Union (EU) over the future of HESC science forms part of a global contest for national advantage. It is the promise of the scientists engaged in the HESC field that their work will lead to therapies capable of dealing with one of the major challenges of modern medicine: irreversible organ and tissue failure. First created in 1998 by the research teams of James Thomson at the University of Wisconsin and John Gearhart at Johns Hopkins University, HESCs are unique in that they are ‘pluripotent’: that is they are undifferentiated cells that have the capacity to develop into almost all of the body’s tissue types (Gearheart, 1998; Thompson et al, 1998). This plasticity sets them apart from the other types of stem cells derived from adult tissues, foetal tissues and umbilical cord blood and facilitates the claim that HESCs have the potential to generate an unlimited supply of transplantable tissues. Whole organ transplants, such as for heart or kidney disease, will no longer rely on a supply of donors, neurodegenerative disorders such as Parkinson’s, Alzheimer’s disease and multiple sclerosis will become treatable, and patients with chronic conditions such as diabetes will be given new tissues capable of replacing the function of pharmaceutical regimes. Tissue engineering and regenerative medicine, it is argued, will be revolutionised.

However, HESC science is not culturally neutral because the stem cell lines on which it is based are created through a process that requires the destruction of the human embryo. As a result, the scientific and economic progress of HESC science and its therapeutic applications is dependent on the nature of its engagement at national and international levels with key cultural values and beliefs concerning the moral status of the early human embryo. Depending on their social and religious contexts, these values may be more or less sympathetic to the new science and may or may not resonate positively with values supportive of the science such as those of ‘scientific progress’ and ‘population health gain’. Where the human embryo is accorded a high status, there may be cultural resistance to HESC science.

The effect of this collision between the ambition of HESC science and cultural values is to move beyond Foucauldian conceptions of biopolitics into an arena that I have termed ‘cultural biopolitics’. Here the focus for the operation of biopower is not the control of
populations or bodies but the control of the values that permit or proscribe the
development of health technologies (technologies that, in turn, may or may not
subsequently act as modes of population or individual control). Furthermore, the
political locale for the conduct of this form of biopolitics is no longer the single nation
state alone but also collectivities of states that may interact through the medium of
regional or international institutions. Through their interaction, they create discourses
about cultural values that are dynamic, capable of achieving compromise, and to
varying degrees routinised through the use of bioethics as an enabling mechanism.

The argument of this paper resonates with that in Catherine Waldby’s chapter ‘Stem
Cell Research, Biopolitics and Globalisation’. But whereas Waldby’s focus is on the
biopolitics that accompanies the operation of the competition state in the new global
knowledge economy of stem cell science, my concern is with the cultural biopolitics
that accompanies the operation of the parallel moral economy where values also are
traded. The exploration of the moral economy through a case study of the EU provides
the opportunity to locate its dynamics within the specific institutional contexts of the
Commission, Council of Ministers and Parliament. At the same time, this approach
allows the contribution of bioethics to the conduct of the EU’s cultural biopolitics to be
analysed in terms of both discourse and structures.

Cultural biopolitics and bioethics
HESC science generates cultural conflict not because its subject is stem cells but
because its subject is human embryonic stem cells. HESCs are derived from the inner
cell mass of five to six day old pre-implantation embryos called blastocysts. In order to
derive HESCs, the outer membrane of the blastocyst is punctured and the inner cell
mass with its pluripotent stem cells transferred to a petri dish containing a culture
medium. The blastocyst is thus destroyed and the HESCs are cultivated in vitro to
produce a stem cell line. Stem cell lines can then be modified so that they differentiate
into the cells of particular tissues depending on the therapeutic objective of the
investigation.

The global political struggle over the moral status of the human embryo, and the role
of religion within that struggle, is not, of course, a new phenomenon but a continuing
feature of the experience of medical science in such arenas as assisted reproductive
technologies (ART), pre-implantation genetic diagnosis (PGD) and, most notably,
abortion. In the case of the latter, there is plentiful data illustrating the international
variation in national values. For example, the United Nations’ (UN) Abortion policies:
a global review shows how the different national policies weight the moral status of the
embryo against other cultural values. Thus, abortion is permitted upon request
(individual choice) in 65 per cent of developed countries, but 14 per cent of developing
countries, and for economic and social reasons in 75 per cent of developed countries
and 19 per cent of developing countries. Least contentious is abortion to save the
woman’s life which is permitted in nearly all developed (99 per cent) and developing
(96 per cent) countries (United Nations, 2002). At the regional level of the European
Union (EU), the 2005 Eurobarometer survey shows a similarly large variation of values
regarding the human embryo (European Commission, 2005: 71). Although 53 per cent
of EU citizens believe that ‘protecting the dignity of any human unborn life will be very
important for our society in ten years time’, this figure disguises a wide variation
between countries like Malta (74 per cent), Greece (73 per cent) and Ireland (73 per
cent) at one end of the continuum and those like Bulgaria, Hungary and Lithuania (all 37 per cent) at the other. (The policies on abortion of Malta - illegal under all circumstances - and Ireland – permitted to save the woman’s life – are consistent with their citizens’ values.)

At the national level, cultural divisions over the status of the human embryo have produced acrimonious and long standing conflicts on abortion policy to the extent that in the United States (US) they have assumed the mantle of ‘culture wars’ with religion a significant player (Hunter, 1994; MConkey, 2001; see also Mulkay, 1997 on the United Kingdom (UK) debates). On both sides of the cultural divide, religious groups have provided a continuing source of political pressure as medical advance has brought the human embryo on to the policy agenda in new forms (Hofmann and Johnson, 2005). However, in Europe it is primarily Catholicism that has acted as the main religious influence on both national and transnational policy formation on the human embryo (Githens, 1996; Minkenberg, 2003). Focusing on several types of embryo research including PGD, embryo production for research purposes, ESC lines, and therapeutic cloning, Fink identified a clear relationship between the proportion of Catholics in a European country and restrictive embryo research policies (Fink, 2005).

Given this context, how can we best conceptualise the cultural biopolitics generated by the demands of HESC science and the contribution of bioethics to the consequent competition for control of political meaning? Social anthropology’s approach to the concept of ‘culture’ and ‘cultural politics’ has evolved in ways that render it a useful tool for the political scientist engaged in understanding how values interact with the operation of power. Originally, anthropology treated ‘culture’ as if it were a set of ideas or meanings shared by a whole population of homogeneous individuals (Asad, 1973, 1979). ‘Culture’ thus became a bounded entity with a fixed identity that sustained itself in a static equilibrium (Gough, 1968). However, more recent approaches have challenged this interpretation and emphasised instead the dynamic nature of culture ‘as an active process of meaning making and contestation over definition, including itself’ (Street, 1993: 2). Clearly this approach resonates much more readily with the concept of ‘politics’ where the struggle for power is a given that is rarely, if ever, static. It makes it clear that culture is a resource that can form part of the political action in terms of both context and content.

Once ‘culture’ is seen as a contested process of meaning making, other questions about key terms and concepts arise. In her discussion of the politicisation of culture, Wright suggests we need to ask:

How are these concepts used and contested by differently positioned actors who draw on local, national and global links in unequal relations of power? How is the context framed by implicit practices and rules – or do actors challenge, stretch or interpret them as part of the contest too? In a flow of events, who has the power to define? How do they prevent other ways of thinking about these concepts from being heard? How do they manage to make their meanings stick, and use institutions to make their meanings authoritative? With what material outcomes? (Wright, 1998: 9)

This politicised view of culture presents cultural values as part and parcel of the political process. Culture is no longer absolute, nor separate nor non-negotiable but
part of the enduring competition for power by conflicting interests. Like all forms of politics, the struggle for control of the meaning to be attributed to significant cultural issues is susceptible to mechanisms that, through systems of rules productive of outcomes, enable the routinisation of that struggle. Particularly where cultural values stand in the way of scientific and economic advance, a method that brings the cultural opposition from behind the barricades to the negotiating table is likely to be welcomed by governments desirous of solutions. Once at the table that opposition may find that its values have no special ontological status but are converted and defined merely as counters in a currency that can be traded in the political market place. If the currency is dependable enough, if it has international credibility and if it is generally convertible then the exchange of values it facilitates can be described as a global moral economy. As a currency it must of course remain neutral: it must not be seen as having its own interest but as the impartial means for achieving fruitful moral trade. Like all currencies, its success in encouraging global moral trade will a marked by an increase in its own political value.

As the emerging currency of the international moral economy, bioethics presents itself as a neutral technique that uses ‘tools for measurement that transcend culture’ and are able to produce ‘a single, correct solution for each ethical problem which is largely independent of person, place or time’ (Bosk, 1999: 63). It is thus an eminently transferable coinage since its value is derived from its apparent impartial functionality for the governance of science rather than from any localised source of historic or cultural authority such as religion. But its growing hegemony over the governance of new health technologies in the global moral economy is due also to its adaptive qualities. Although its genesis was associated with the institutions of medical education and medical ethics, it rapidly developed alliances with other knowledge territories, thus broadening the sources of its epistemic power. In this context Lopez observes that ‘its legitimacy and authority are in part secured through the way it is embedded in an ecology of social sanctioned knowledges (e.g. law, medicine, economics, moral and political philosophy, and political liberalism), as well as practices of governance and self-government’ (Lopez, 2004: 888). This may mean that as an epistemic community bioethics is less than coherent but since enhanced power not coherence is the objective of any hegemonic enterprise, this is clearly a price worth paying.

Its political flexibility is also demonstrated in its ability to evolve in order to maintain its governance lead as the arbiter of cultural tensions. Thus, for example, in 1994 Knoppers and Chadwick identified five basic principles underlying what they termed the ‘international consensus’ on research on the human genome: autonomy, privacy, justice, equity and quality out of respect for human dignity (Knoppers and Chadwick, 1994). Nine years later they concluded that, as a result of new genetic research, these existing principles had been superseded by new international trends in ethics that should be collated and codified as the principles of reciprocity, mutuality, solidarity, citizenry and universality (Knoppers and Chadwick, 2005). From the perspective of Knoppers and Chadwick as leading bioethicists, the ad hoc evolution of bioethics through the adaptation of its initial principles to local technological development at the national level was acceptable but needed order imposed upon it (by them). To be globally viable, bioethics must transcend the national cultural context in the same way that medical science had done. For without an international order sanctioned by the
bioethics elite, the means of value exchange and trading would be uncertain and the functionality of bioethics as the currency of the global moral economy undermined.

**National pressures and ethical boundaries**
The moral economy of the EU in respect of HESC science can be analysed in terms of the components derived from the building blocks of HESC science. These are thus simultaneously scientific and ethical objects (Figure 1).

**Figure 1**

**The components of cultural trading**

- embryo source
  - aborted
  - IVF supernumary
  - non-IVF donated
  - cloned
- embryo creation date
- embryo age
- HESC line origin
- HESC line creation date
- HESC line research purpose

Through the use of ethical arguments for or against the use of particular components, or combinations of components, hierarchies of meaning are created and choices implied about the preferred future path of HESC science. Given the scientific, economic and cultural pressures at work in the field, over time positions are rarely static and cultural trading occurs in the sense that a government or authority may, in response to these pressures, alter its support for particular components, or set of components in order to achieve political advantage or a workable political compromise. In addition, new scientific possibilities combine with the inventiveness of bioethicists to generate new cultural components to the discourse.

In 2003, A European Commission survey of the then 15 Member State policies at the time of the debate about HESCs and FP6 revealed five major regulatory positions when expressed in terms of the above components, positions from which we can assume their cultural bargaining would begin (Table 1):

1. prohibition of procurement of HESCs from human embryos
2. prohibition of procurement of HESCs but allowing importation
3. allowing procurement of HESCs from supernumerary human embryos
4. prohibition of creation of human embryos for research purposes including cloning
5. Allowing the creation of human embryos for research purposes including cloning
In cultural terms, the policy positions are constructed so that as one moves from 1 to 5 the moral status (value) attached to the human embryo diminishes and the value attached to its scientific, commercial and social utility correspondingly increases. In regulatory policy terms, the same continuum can be described as extending from ‘restrictive’ (of scientific freedom through protection of the embryo) to ‘liberal’ (facilitative of science, industry and certain social interests) – though these terms of course have their own value connotations. In political terms, the continuum shows the increasing impact of scientific, industrial and pro-HESC social interests as one moves from Option 1 to Option 5.

Table 1

Regulations in EU Member States regarding human embryonic stem cell research
(March 2003)

<table>
<thead>
<tr>
<th>Type of regulatory control</th>
<th>Austria</th>
<th>Belgium</th>
<th>Denmark</th>
<th>Germany</th>
<th>Spain</th>
<th>Finland</th>
<th>France</th>
<th>Greece</th>
<th>Ireland</th>
<th>Italy</th>
<th>Luxembourg</th>
<th>Netherlands</th>
<th>Portugal</th>
<th>Sweden</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prohibition of human embryo research</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prohibition of the procurement of ESCs from human embryos</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prohibition of procurement of ESCs from human embryos but allowing by law for importation of human ESCs</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allowing for the procurement of human ESCs from supernumary embryos by law</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Prohibition of the creation of human embryos for research purposes by law or by ratification of the Council of Europe’s Convention on Human Rights and Biomedicine</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Allowing for the creation of human embryos for ESC procurement by law</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>No specific legislation regarding human embryo research</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

At one end of the continuum of regulatory positions, the UK’s Human Fertilisation and Embryology (Research Purposes) Regulation 2001 extends the Human Fertilisation and Embryology Act 1990 to permit the use of embryos, regardless of source, in research to increase knowledge about serious diseases and their treatment. At the other, the Irish constitution of 1937 (as amended in 1983) provides that ‘the State acknowledges the right to life of the unborn and, with due regard to the equal right to life of the mother, guarantees in its laws to respect, and as far as practicable, by its laws to defend and vindicate that right’ (European Commission, 2003b: 42). As Table 1 shows, in between there lie a variety of Member State positions and non-positions constructed by states seeking to reconcile conflicting cultural pressures from civil society, science and industry. For example, in an attempt to remove the human embryo from the political equation (and/or to distance themselves from the act of embryo destruction necessary for ESC creation), Germany, Austria and Denmark have allowed the importation of ESC lines whilst internally prohibiting their procurement from human embryos. In addition, Germany’s Stem Cell Act 2002 requires that the ESCs were derived from supernumerary embryos before 1 January 2002 in the country of origin (European Commission, 2003b: 40). (The date of ESC line creation is, of course, the same criterion as that used by President Bush when he announced his decision to allow Federal funds to be used for research on existing – ie pre 9th August 2001 – human ESC lines: an example, perhaps, of transnational policy learning.) Commenting on the ethical contortions involved in the policy of ESC lines importation, the EGE noted ‘a tendency to accept double morality where there is no coherence between different positions adopted by country’. It continued: ‘one could expect that to consider research on human embryos to derive stem cells as unethical, might imply the prohibition of the import for research of embryonic stem cells derived from human embryos as well as of the use of potential therapeutic applications resulting from such research, which is not always the case.’ (EGE, 2002: para 1.21). In the difficult world of human embryo politics, ‘double morality’ may well be the ethical price that has to be paid for a political compromise.

As the agenda setting debate for FP6 got under way, and as the move to establish genomics and biotechnology for health as its first priority became evident, so the cultural tensions inherent in this range of policy positions became manifest. The political atmosphere was already well heated, particularly in the European Parliament. As early as March 1989 a Parliamentary resolution on the ethical and legal problems of genetic engineering had called for legislation prohibiting any gene transfer to human germ line cells and defining the legal status of the human embryo in order to provide unequivocal protection of genetic identity (European Parliament, 1989). Other resolutions followed in 1993, 1997, and 1998 opposing cloning of the human embryo, supporting the Council of Europe’s Convention on Human Rights and Biomedicine and calling on Member States to introduce a legally binding ban on the cloning of human beings (European Parliament, 1993, 1997, 1998).

In this context, the publication on 16th August 2000 of the UK Department of Health’s Stem cell research: medical progress with responsibility not only raised the political temperature dramatically, it also succeeded in focusing the European Parliament’s attention by recommending that research on human embryos for therapeutic purposes (including somatic cell nuclear replacement (SCNR) – ‘therapeutic cloning’) should be permitted: a very permissive approach when compared to other EU countries. National cultural differences now had a specific target issue and, with the FP6 awaiting approval
and contingent upon Parliamentary support, a powerful institutional vehicle for registering conflicting cultural values. (Decisions on Framework Programmes have to be made by co-decision between the Council and Parliament.)

The subsequent EU debate about HESC research and FP6 constituted a struggle for control of the political discourse and thus of the policy agenda. Within the debate emerged a range of more detailed positions, again constructed from the units of cultural trading listed in Figure 1 and using combinations outlined in Figure 2. Each ethical cell in the matrices can be regarded as potential agenda setting territory and thus as a political resource that through the operation of the moral economy may be exchanged for, or coupled with, other cells as trading takes place within the political discourse.

**Figure 2**

*Combinations of ethical units in the moral economy of HESC science*

<table>
<thead>
<tr>
<th>ESC Conditional date of creation</th>
<th>Embryo Conditional date of creation</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Donated embryo</strong></td>
<td>No</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>Supernumerary embryo</strong></td>
<td>No</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td><strong>Aborted embryo</strong></td>
<td>No</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td><strong>Cloned embryo</strong></td>
<td>No</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>15</td>
<td>16</td>
</tr>
</tbody>
</table>
Institutional struggle and political discourse

Given the diversity of Member State policy positions on the moral status of the human embryo, it was to be expected that the UK’s report advocating greater freedoms for ESC research would prove provocative and ethically challenging. Responding to that report, on 7th September 2000 the European Parliament passed a resolution opposed to both reproductive and therapeutic cloning. Therapeutic cloning (Figure 2, cells 13-16) was seen as ‘irreversibly crossing a boundary in research norms’ and as contrary to public policy as adopted by the European Union (European Parliament, 2000). Much of the debate was couched in emotive and categorical terms with little suggestion from the opponents of ESC research that negotiation was either possible or proper. In its report *Ethical aspects of human stem cell research and use* published two months later, the EGE took a more sophisticated view and began the process of establishing an ethical continuum of types of human embryo and ESC research, using the kinds of criteria employed in Figure 2, and suggesting that some criteria are more acceptable than others (EGE, 2000). While it regarded spare (supernumerary) embryos as an appropriate source for stem cell research, in an interesting conditional formulation it deemed ‘the creation of embryos with gametes donated for the purpose of stem cell procurement [as] ethically unacceptable, when spare embryos represent a ready alternative’ (EGE, 2000: para 2.7. Figure 2, cells 5-8 plus a conditional acceptance of cells 1-4). Meanwhile, ‘the creation of embryos by somatic cell nuclear transfer for research on stem cell therapy would be *premature*’ since there are alternative sources (EGE, 2000: para 2.7, stress added. Figure 2, cells 13-16). Embedded in this discourse are notions, firstly, of embryo status contingent upon source and, secondly, of ethics as a developmental process that moves from ‘premature’ to, presumably, mature.

The EGE report signalled a move by some actors involved in the construction of the political narrative to attempt to change the debate from one characterised by static and opposing ethical positions to one where successive refinements of position were normal and negotiation possible: in other words, it sought to establish the basic requirements of a moral economy. As time drew nearer for Parliament to consider the Commission’s Framework Programme Six proposal, and as the critics of human embryo research made it clear that they would use this as an opportunity for expressing their opposition, so the objective need for negotiating room increased. Although the subsequent Parliamentary debate on the First Reading of the proposal in November 2001 suggests that little had changed, and that categorical statements of broad ethical positions were still the norm, the amendments incorporated into the proposal prove otherwise. The amendments meant that FP6 would not fund ‘research activity aiming at human cloning for reproductive purposes’ or ‘the creation of embryos for research purposes including somatic cell nuclear transfer’ (therapeutic cloning – Figure 2, cells 13-16). However, it would fund (and here is the compromise) ‘research on “supernumerary” early-stage (ie up to 14 days) human embryos (embryos genuinely created for the treatment of infertility so as to increase the success rate of IVF but no longer needed for that purpose and when destined for destruction)” (European Parliament, 2001a: Article 3. Figure 2, cells 5-8)

The success of these amendments indicates that there is in the situation a sub-text of covert political negotiation and cultural trading around the ethical components of embryo source and embryo age (up to 14 days). (The latter is of course elsewhere described as the ‘pre-embryo’, an important political category in the long running UK embryo debate – Mulkay, 1997: 30-2; Spallone, 1999). Under pressure from the
conflicting political constituencies of the Framework Six Programme, the political discourse was beginning to evolve and to suggest that some types of embryos are ethically more important than others. In an attempt to facilitate this evolution and as part of the search for a way through the thickets of the ethical debate, in December 2001 the European Parliament set up the Temporary Committee on Human Genetics and Other New Technologies of Modern Medicine to report on the ethical, legal, economic and social implications of human genetics. In the event, its activities served to stimulate the involvement of new civil society policy networks in the discussion and legitimise the inclusion of fresh ethical dimensions. As the debate on its final report on 29th November 2001 demonstrates, ethical collisions in the Parliamentary arena were at this stage more achievable than were compromise positions (European Parliament, 2001b).

In contrast to this, in the separate arena of the EGE a moral economy was clearly at work: the expert agenda of human embryo research was experiencing a further process of ethical refinement in response to scientific and industrial demands for greater regulatory protection of their HESC investments. By 2002, there had been 500 patent applications worldwide referring to embryonic stem cells - of which one quarter had been granted – but the EU’s position on whether patents on human embryonic stem cells should or could be granted under the conditions of its 1998 Patent Directive remained unresolved (EGE, 2002: para 1.16). The Directive was clear that industrial and commercial exploitation of human embryos is excluded from patenting but unclear about the patentability of cells obtained from embryos, regardless of embryo source (EGE, 2002: para 1.21). Reflecting on this issue, the Group stated its opinion that ‘patenting of inventions allowing the transformation of unmodified stem cells from human embryonic origin into genetically modified stem cell lines or specific differentiated stem cell lines for specific therapeutic or other uses, is ethically acceptable as long as the inventions fulfil the criteria of patentability’ (EGE, 2002: para 2.5). However, this liberalisation of the ethics of patenting was balanced by the EGE’s view on therapeutic cloning where, drawing on its earlier Opinion *Ethical aspects of human stem cell research and use*, it called for ‘a cautious approach, excluding the patentability of the process of creation of a human embryo by cloning for stem cells’ (EGE, 2002: para 2.5).

It is clear that at this stage the search for practical ethical solutions to cultural conflict around HESCs and thus the activation of the moral economy was progressing much more swiftly in the expert arena of the bioethicists than in the Parliamentary and Council arenas of the politicians. Nonetheless, it was in the latter two arenas that a way forward had to be found if FP6 was to be funded. Institutional struggle was about to begin in earnest. In an interesting and, in the view of the opponents of human embryo research, challenging manoeuvre, at the Second Reading of the FP6 proposal in June 2002 Parliament voted through the overarching Framework Programme and transferred the issue of the criteria for embryo and human ESC research to the process for approval of the relevant Specific Research Programme (European Parliament, 2002). This meant that the Parliament was not directly involved in the decision making because under EU procedures the Specific Programme details are a ‘technical issue’ and can be decided upon by Council without the agreement of Parliament. However, the advantage gained by this institutional move appeared to have been shortlived when in the September of the same year, under pressure from Austria, Italy, Germany and Ireland, the Council decided on a package of measures in response to the opposition concerns. This
reiterated the ban on therapeutic cloning research and, furthermore, stipulated that there should be: a moratorium on the EU funding of human embryo and human ESC research until December 2003; a report on human embryonic stem cell research as the basis for an inter-institutional seminar on bioethics; and, taking into account the seminar’s outcome, further guidelines on the principles that should guide Community funding of such research to be produced by December 2003 (European Council, 2002). (In an interesting concession to the UK’s pro-ESC research stance, the moratorium explicitly did not include ‘banked or isolated human human embryonic stem cells in culture’.)

The increasing salience of novel modes of organised ethical engagement (Temporary Committee on Human Genetics, EGE Opinions, inter-institutional seminar, development of ethical funding guidelines, ethical review of projects) are indicators of the intensifying search for practical means that would enable a moral economy to work and thus promote the inclusion of cultural factors in the EU’s transnational governance of the life sciences. In its March 2003 progress report on Life sciences and biotechnology – a strategy for Europe, the Commission observed that

Public authorities at large have to take into consideration concerns about the conditions under which fundamental choices are made in this field [of life sciences]. For its part the Commission is committed to ensuring that the ethical, legal, social and wider cultural aspects, as well as the different underlying ways of thinking, are taken into account at the earliest possible stage in Community-funded research. In particular, the issues of human cloning and human embryonic stem cell research have provoked intense public and political debate. Ethical and social debate must continue to be a natural part of the research and development process involving society as much as possible. (European Commission, 2003a: 3. Commission stress.)

However, the widespread recognition that cultural values are a legitimate component of the transnational governance of the life sciences did not readily lead to a parallel acceptance of the new mechanisms for the resolution of cultural conflict. Following the Commission’s exhaustive report on human embryonic stem cell research and the inter-institutional seminar drawing on its findings in April 2003 (European Commission 2003b and 2003c), the terms and constituency of the debate were undoubtedly enhanced – but so also was the difficulty of finding a sustainable compromise position. Cultural trading was taking place but no agreement could yet be reached.

Driven to a search for the lowest common ethical denominator, in June 2003 the Commission proposed a set of ethical guidelines that included the selection of embryos for research on the basis of the criteria of embryo source and date of embryo creation. Community funding was to be restricted to the derivation of human embryonic stem cell lines ‘from human embryos created as a result of medically-assisted in vitro fertilisation designed to induce pregnancy and were no longer to be used for that purpose’ (supernumary embryos) and created before 27 June 2002, the date of approval of the overarching Framework Programme 6 (Figure 2, cells 6 and 8) (European Commission, 2003: 4-5). Unsurprisingly, international scientists objected strongly to the date of embryo creation criterion being applied because of what they saw as its impact on the freedom and quality of their research (Research Europe, 2003). Under the terms of the consultation procedure, the European Parliament debated the Commission’s proposal in November 2003 and, agreeing with the scientific view, not
only removed the 27 June 2002 restriction but also enlarged the embryo source criterion to include those produced by spontaneous or therapeutic abortion (Figure 2, cells 9-12) as well as supernumerary embryos from IVF treatment (European Parliament, 2003a). This amendment in turn proved unacceptable to the Council with the result that on 31 December 2003 the moratorium on human ESC research expired with no agreement on the principles that should guide Community funding of that research. By default, therefore, the criteria contained in the European Parliament and Council Decision of 27 June 2002 and the Council Decision of 30 September 2002 in respect of the Specific Research Programme remained in place. Human embryonic stem cell research using therapeutic cloning (Figure 2, cells 13-16) could not be funded, that based on supernumary embryos (Figure 2, cells 5-8) could, and the position of research using donated and aborted embryos (Figure 2, cells 1-4 and 9-12) as the source remained unresolved.

The volatility of the continuing cultural biopolitics of human embryonic stem cell research and FP6 is manifest both in the constantly shifting mosaic of ethical components in the political discourse and in the absence of any pattern in the institutional struggles between Commission, Council and Parliament. A stable moral economy had yet to emerge. As different configurations of Figure 2’s ethical components came to the fore at different times, so the institutions would change their positions. A further destabilising influence was the engagement between the political chemistry, networks and forces at work in the policy domain of FP6 and that of the neighbouring policy field of human tissues where a directive was being considered. The proposal for a directive setting quality and safety standards in relation to human tissues and cells began its progress through the EU’s legislative machinery on 19th June 2002 (eight days before the approval of the FP6) and immediately became the focus of a conflict not about ethics as such (though this formed part of the debate) but, more importantly, about what ethics could legitimately be included in the discussion and what excluded. In this respect it became a test case for determining what role ethics should have in this policy making domain and thus whether it was legitimate for a moral economy to exist at all in certain policy fields.

The opponents of human embryo research saw the directive as the means for implementing a pre-emptive strike against the pro-ESC lobby. If the ethical components of Figure 2 could be inserted into the directive as a block on human embryonic stem cell research, Member States would be obliged to implement it at the national level. The activities of their scientists would thus be curtailed regardless of the outcome of the conflict in the FP6 policy domain. However, the idea that difficult ethical issues should be incorporated into the directive did not resonate well with the culture of the sponsoring Commission Directorate Health and Consumer Protection which saw the business of setting standards for the donation, procurement, testing, processing, storage and distribution of human tissues and cells as a largely technical exercise with ethics making a facilitative rather than a challenging contribution to the implementation of an existing policy agenda. The European Group on Ethics had earlier in 1998 produced its report Ethical aspects of human tissue banking dealing with ethical issues such as the protection of health, the integrity of the human body, informed consent and the protection of identity and these were happily incorporated into the first draft of the proposal for a directive (EGE, 1998; European Commission, 2002). In an aside, the proposal noted that ‘germ cells, foetal cells/tissues and embryonic stem cells pose particular ethical problems’, that ‘there is no consensus
among Member States upon which basic harmonised decisions at EU level can be taken with regard to their use or prohibition’, and that ‘the proposal does not interfere with decisions made by Member States concerning the use or non-use of any specific type of human cells, including germ cells and embryonic stem cells’ (European Commission, 2002: 5-6).

This hands off approach was abruptly challenged by the Committee on the Environment, Public Health and Consumer Policy in its report to the Parliament as background to the First Reading of the proposal. (It is no coincidence that the rapporteur for the Committee was Peter Liese: a Catholic Christian Democrat MEP who was also active in the HESC and FP6 arena.) Here it was proposed that Member States should at least prohibit research on human cloning for reproductive purposes or to supply stem cells, including by means of the transfer of somatic cell nuclei; that no tissues or cells derived from human embryos should be used for transplantation; and that cloned human embryos and human/animal hybrid embryos produced by cloning should be excluded as sources of material for transplant (European Parliament 2003b: amendments 14, 30 and 51). The subsequent acceptance of these amendments by Parliament shifted the focus of the ethical debate from utilitarian values concerned with the details of directive implementation to fundamental values that questioned parts of the science on which the directive was, or might be, based. To counter this, in revising the proposal, the Commission used the interesting tactic of defining some ethics as appropriate to the directive and others not. Thus whilst it was able to accept ethical provisions related to the anonymity of donors and non-profit procurement it argued that other provisions (notably those concerned with human embryos) fell ‘outside the scope of Article 152 of the Treaty, which provides for public health protection and not for the implementation of ethical objectives’ (European Parliament, 2003c: 7, stress added). In other words, it argued that only a very restricted kind of moral economy was appropriate to this issue.

In the Second Reading by Parliament of the directive this selective approach to the role of ethics was sustained and the opponents of human embryonic stem cell research were obliged to accept a compromise amendment that protected the rights of Member States to ban or restrict the use of ESCs and stipulated that, where used, they should be subject to the directive’s provisions for the protection of public health (European Parliament and European Council, 2004). However, as with FP6 and the preparations for FP7, the debate and the political manoeuvring continue. A second directive (or regulation) is being prepared that would harmonise the regulatory framework on human tissue engineered products – the arena in which any therapeutic applications of human ESC research would naturally reside. No doubt the opponents of HESC research are already preparing their positions.

Conclusions
The therapeutic promise of human embryonic stem cell research has generated a global competition for the control of its social, scientific and industrial future that is increasing in intensity. Countries are investing in the basic research necessary to develop the field, re-examining their regulatory arrangements, and seeking to attract transnational life sciences companies. But they do not operate in a cultural vacuum. Elements in their civil societies may draw upon a variety of cultural values to support or oppose what is officially regarded as being in the national scientific or industrial interest. To
the extent that these cultural pressures are problematic, a cultural biopolitics is generated characterised by a moral economy where the trading of values facilitates negotiation and compromise.

In the case of the EU, these pressures are localised through the interaction of Member State positions in the context of the EU’s institutions and procedures. Member State cultures as revealed in legislative form are not static but themselves responsive to the international context. Thus, for example, in July 2004 the French parliament banned reproductive human cloning as a ‘crime against the human species’ but postponed its ban on the use of supernumerary embryos for embryo research thus allowing certain types of HESC research to continue (Channelnewsasia, 2004). With less equivocation, in September 2004 the new Spanish socialist government announced that it would permit human embryonic stem cell research and viewed therapeutic cloning as ‘an open matter’ (Yahoo!news, 2004; The Scientist, 2004). As Member States change their positions so the matrix of forces at work in the Commission, Council and Parliament also shifts to create a continuing volatility in the balance between the ethical components of the moral economy.

However, some parts of that economy are more volatile than others. Whereas the public debates of the European Parliament on human ESCs and FP6 were usually characterised by the stark presentation of conflicting cultural positions, in the expert arena of bioethics the search for compromise ethical equations has generated a quite different political style characterised by reason, flexibility and adaptation. While in the former, the cultural biopolitics were raw and challenging, in the latter the explicit search for political utility has necessitated the development of the rules and procedures that can contribute to a practical outcome. Cultural biopolitics in the EU is therefore operating at two levels in order to accommodate the otherwise incompatible requirements of (a) the unchanging legitimacy of particular value positions and (b) the need for those positions to be negotiable. As the application of the ethical components of Figure 2 to the political discourse of both levels has illustrated, there now exists a range of finely graded value positions on human ESC research that constitute the currency for biopolitical trading. Although at the public level this trade would be denied, the evidence of the political discourse is that such trading indeed occurs, though as yet inefficiently.

For the future, and as the therapeutic applications of human ESC research become more evident, the prospect is one of a continuing engagement between the policy domains of HESC science and human tissues. This will be overlaid with a continuing cultural struggle for control of the EU’s emergent new methods for the transnational governance of science. There will then be an objective need for the clarification of the role of ethics in the political discourse and of what Gottweis terms ‘the ethics infrastructure’ (Gottweis, 2003). National and transnational cultural groupings are becoming increasingly sophisticated in the formation and presentation of ethical arguments in this field and will require a parallel improvement in the way in which ethics is used as a form of political currency and exchange in the moral economy. Attempts to exclude ethical issues from the EU’s biopolitics as occurred in the case of the human tissue directive are likely to prove counter productive because they ignore the established and growing cultural pressures on the policy making apparatus of the EU.
This analysis suggests that institutionalised modes of ethics engagement will become a permanent feature of the new cultural biopolitics as mechanisms are sought that will enable the refining, manipulating, resolving and legitimating of cultural differences through the trading of values in an authoritative language and setting. Such modes are likely to continue to operate in parallel to the formal procedures of Commission, Council and Parliament in an attempt to offset the ponderous limits of these institutions to deal with cultural biopolitics. This paper has noted the politically functional contribution of the European Group on Ethics not only to the lubrication of the ethical interaction through its elaboration of fresh ethical distinctions and perspectives but also to the facilitation of decision making through the judicious use of its claim to impartiality. Bioethicists are emerging as a new epistemic power group capable of brokering difficult cultural deals at both the national and international levels and their inclusion in the transnational governance of the EU is part of a global process (Salter and Jones, 2005). As the EU case has shown, in the human embryonic stem cell field they can enable the interrogation of ethical options, and thus the refinement of the political currency of the moral economy, through the investment of ethical significance in such characteristics as the source, date of creation, age and research purpose of the embryo or ESC. Over time, and if functionally successful, we may find that the command of ethical as opposed to scientific expertise elevates bioethicists to the status of what may be termed ‘the new technocrats’ of transnational scientific governance.

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