

TOPIC GUIDE: DESIGNER BABIES

**"HUMAN GENETIC ENGINEERING IS A
STEP TOO FAR"****PUBLISHED: 01 MAY 2007****AUTHOR: JAMES GLEDHILL**

Share this Topic Guide:

**INTRODUCTION**

Human genetic engineering provokes strong reactions. Dr David King, director of Human Genetics Alert, recently warned: 'In a world first, the Government has said it will allow scientists to begin developing the technology for genetic modification of human beings, although creation of actual GM babies will be prohibited for the moment. We believe the public will be horrified' [Ref: [Telegraph](#)]. The government move comes in the context of an overhaul of legislation on assisted reproduction and embryology designed to take account of the latest scientific developments [Ref: [Guardian](#)]. The spectre of eugenics haunts the designer babies debate. As one journalist puts it, the idea of designer babies tends to prompt comparisons with the Nazis, the hatcheries in Aldous Huxley's novel *Brave New World* and the biological underclass of the science fiction movie *Gattaca* [Ref: [Times Online](#)]. While there are real concerns about what the future might hold, the debate requires separating fact from science fiction. The argument of supporters of genetic engineering is that fears are often exaggerated. Rather than crossing a significant ethical threshold, they say we'll benefit from a continued improvement in our ability to overcome disease and improve people's lives. Deciding who is right first requires understanding what scientists are capable of doing today. Then future possibilities need to be assessed. Finally, we'll be in a position to assess what poses the greatest danger: that we take a step too far or that we fail to take the necessary steps towards further scientific developments.

For further reading use the menu bar on the right hand side.

DEBATE IN CONTEXT

This section provides a summary of the key issues in the debate, set in the context of recent discussions and the competing positions that have been adopted.

What is a designer baby?

In debates about pre-implantation genetic diagnosis (PGD) the term 'designer baby' refers to a baby whose genetic make-up has been selected as a way of avoiding genetic defects or to ensure the presence of a particular gene. The development of genetic engineering raises the possibility of

designer babies in a more radical sense, babies whose genetic make-up has been modified and not just selected. This would involve modifying the DNA of an embryo created by in vitro fertilisation (IVF) and then introducing it into a womb. Currently this is both scientifically impossible and illegal. However, the emotive power of the term 'designer baby' derives largely from the idea that the use of existing technologies like PGD is part of a slippery slope towards morally objectionable human genetic engineering. Ethical debate has focused on whether such technologies risk turning children into commodities to be picked off the shelf, or even designed to order, or whether parents and scientists can be trusted to use these developments in ways that improve human life.

What can science do at the moment?

PGD involves genetic testing of embryos so that only embryos with desired characteristics are placed in the womb. Such screening is used where there is a likelihood of genetic abnormalities being present that might lead to a serious medical condition or disability, or miscarriage. These inherited conditions include cystic fibrosis, muscular dystrophy and, more recently, Alzheimer's [Ref: [Times Online](#)], eye cancer [Ref: [Times Online](#)] and breast cancer [Ref: [Times Online](#)]. This increasing range of application has proven controversial, particularly as the permission given for the use of PGD to prevent a severe squint shows that a serious condition need not be a life-threatening one [Ref: [BBC News](#)]. Supporters see this as bringing increasing medical benefits, but opponents say it contributes to a demand for the 'perfect' baby. Screening can also be used for tissue typing that allows a suitable donor to be found for a sibling with a life-threatening illness, a so-called saviour sibling [Ref: [BBC News](#)]. Prominent cases are those of Charlie Whitaker [Ref: [BBC News](#)] and Zain Hashmi [Ref: [BBC News](#)]. Critics say babies are being used for 'spare parts' – seen as a means to an end rather than valuable in themselves. Supporters question whether such parental choices really damage the resulting child.

What might science be able to do in the future?

Current law allows therapeutic cloning [Ref: [Guardian](#)] where scientists create human embryos and study them for up to 14 days in an attempt to derive stem cells [Ref: [BBC News](#)]. So far this has not proven possible, and claims of success made by a Korean scientist were found to have been faked [Ref: [BBC News](#)]. Reproductive cloning, where a cloned embryo is allowed to grow into a baby, is banned. However, some scientists – including Professor Ian Wilmut who cloned Dolly the sheep – have backed the limited use of reproductive cloning as a future way of combating genetic disease [Ref: [BBC News](#)]. This would involve germline genetic engineering, or genetic modification that is inheritable [Ref: [Genetics and Society](#)].

Is there a danger of a slippery slope?

Both sides in the debate agree it's hard to draw a line between therapies that use genetic technologies to prevent disease and its use for human enhancement. However, they draw different conclusions from this. Those opposed to designer babies foresee a slippery slope towards parents pursuing beauty or intelligence through the manipulation or insertion of genes. Those in favour of continued scientific development remain sceptical that such scenarios will occur, seeing such fears as a distraction from pursuing current benefits. However, a minority of so-called transhumanists think radical human enhancement is feasible and desirable.

ESSENTIAL READING

It is crucial for debaters to have read the articles in this section, which provide essential information and arguments for and against the debate motion. Students will be expected to have additional evidence and examples derived from independent research, but they can expect to be criticised if they lack a basic familiarity with the issues raised in the essential reading.

If you're after a designer super-baby, you can forget it [🔗](#)

Mark Henderson April 2007

Stop GM human embryos! [↗](#)

Richard Nicholson **Human Genetics Alert Statements** February 2007

Stop GM human embryos! [↗](#)

Michael Antoniou **Human Genetics Alert Statements** February 2007

The threat of human genetic engineering [↗](#)

David King **Human Genetics Alert** February 2007

Designer babies: Ethical considerations [↗](#)

Nicholas Agar **ActionBioscience.org** April 2006

There is no stop button in the race for human re-engineering [↗](#)

Madeleine Bunting **Guardian** January 2006

Matters of life and death [↗](#)

Mary Riddell **Observer** August 2005

The designer baby myth [↗](#)

Stephen Pinker **Guardian** June 2003

Inheritable Genetic Modification (IGM): Basic science [↗](#)

Center for Genetics and Society May 2003

Inheritable Genetic Modification (IGM): Arguments pro and con [↗](#)

Center for Genetics and Society May 2003

Random genes vs. designer kids [↗](#)

Bill McKibben vs. Ronald Bailey **Reason** May 2003

Debating 'designer babies' [↗](#)

Ellie Lee **Spiked** April 2003

Is freedom just another word for random genes? [↗](#)

Ronald Bailey **Reason** April 2003

Designer baby madness [↗](#)

Melanie Phillips **Daily Mail** August 2002

Designer babies and other fairy tales [↗](#)

Maureen Freely **New Statesman** March 2002

FOR

Stop GM human embryos! [↗](#)

Richard Nicholson **Human Genetics Alert Statements** February 2007

Stop GM human embryos! [↗](#)

Michael Antoniou **Human Genetics Alert Statements** February 2007

The threat of human genetic engineering [↗](#)

David King **Human Genetics Alert** February 2007

There is no stop button in the race for human re-engineering [↗](#)

Madeleine Bunting **Guardian** January 2006

Designer baby madness [↗](#)

Melanie Phillips **Daily Mail** August 2002

AGAINST

If you're after a designer super-baby, you can forget it [↗](#)

Mark Henderson April 2007

Matters of life and death [↗](#)

Mary Riddell **Observer** August 2005

The designer baby myth [↗](#)

Stephen Pinker **Guardian** June 2003

Debating 'designer babies' [↗](#)

Ellie Lee **Spiked** April 2003

IN DEPTH

Keeping the research in an embryonic state [↗](#)

John Gillot **Spiked** March 2007

Is there a case for modifying genes? [↗](#)

Roger Highfield **Daily Telegraph** August 2005

Designer babies [↗](#)

Shannon Brownlee **Washington Monthly** March 2002

KEY TERMS

Definitions of key concepts that are crucial for understanding the topic. Students should be familiar with these terms and the different ways in which they are used and interpreted and should be prepared to explain their significance.

Cloning and genetic engineering [↗](#)

Cloning: Therapeutic versus reproductive [↗](#)

Designer baby [↗](#)

Eugenics [↗](#)

Human enhancement [↗](#)

Human tissues and embryos bill [↗](#)

In-vitro fertilisation (IVF) [↗](#)

Pre-implantation genetic diagnosis (PGD) [↗](#)

Saviour sibling [↗](#)

Stem cells [↗](#)

Transhumanism [↗](#)

BACKGROUNDEERS

Useful websites and materials that provide a good starting point for research.

The ethics of genetics [↗](#)

Guardian Special Report January 2009

Q&A: Hybrid embryos [↗](#)

David Batty **Guardian Unlimited** May 2007

Human tissues and embryos (draft) bill [↗](#)

Department of Health May 2007

Quick guide: Cloning [↗](#)

BBC News July 2006

Q&A: Helping a sick sibling [↗](#)

BBC News May 2006

Genetic engineering advantages and disadvantages [↗](#)

Biology-Online.org April 2006

Take a piece of deer scrotum . . . [↗](#)

David Quammen **The Times** June 2005

Q&A: Therapeutic cloning [↗](#)

BBC News February 2005

Q&A: Embryo cloning [↗](#)

Simon Jeffery and Jane Perrone **Guardian Unlimited** February 2005

Citizens' jury on designer babies [↗](#)

Wales Gene Park September 2004

Head-to-head: Human cloning [↗](#)

Alison Murdoch vs. David King **BBC News** June 2004

The politics of genetically engineered humans [↗](#)

Richard Hayes **Loka Institute** May 2000

Human germline engineering: Best hope or worst fear? [↗](#)

UCLA Program on Medicine **Technology and Society** January 1999

Embracing change with all four arms: A post-humanist defense of genetic engineering [↗](#)

J Hughes **Changesurfer.com** January 1996

ORGANISATIONS

Links to organisations, campaign groups and official bodies who are referenced within the Topic Guide or which will be of use in providing additional research information.

BioIndustry Association [↗](#)

bioindustry.org

Citizens' jury on designer babies [↗](#)

Wales Gene Park September 2004

Comment on Reproductive Ethics (CORE) [↗](#)

Embracing change with all four arms: A post-humanist defense of genetic engineering [↗](#)

J Hughes **Changesurfer.com** January 1996

Genetic engineering advantages and disadvantages [↗](#)

Biology-Online.org April 2006

GeneWatch UK [↗](#)

genewatch.org

Head-to-head: Human cloning [↗](#)

Alison Murdoch vs. David King **BBC News** June 2004

Human Fertilisation and Embryology Authority (HFEA) [↗](#)

Human Genome Project [↗](#)

sanger.ac.uk

Human germline engineering: Best hope or worst fear? [↗](#)

UCLA Program on Medicine **Technology and Society** January 1999

Human tissues and embryos (draft) bill [↗](#)

Department of Health May 2007

Nuffield Council on Bioethics [↗](#)

nuffieldbioethics.org

Q&A: Embryo cloning [↗](#)

Simon Jeffery and Jane Perrone **Guardian Unlimited** February 2005

Q&A: Helping a sick sibling [↗](#)

BBC News May 2006

Q&A: Hybrid embryos [↗](#)

David Batty **Guardian Unlimited** May 2007

Q&A: Therapeutic cloning [↗](#)

BBC News February 2005

Quick guide: Cloning [↗](#)

BBC News July 2006

Take a piece of deer scrotum . . . [↗](#)

David Quammen **The Times** June 2005

The ethics of genetics [↗](#)

Guardian Special Report January 2009

The politics of genetically engineered humans [↗](#)

Richard Hayes **Loka Institute** May 2000

IN THE NEWS

Relevant recent news stories from a variety of sources, which ensure students have an up to date awareness of the state of the debate.

Hybrid embryos get go-ahead [↗](#)

Guardian Unlimited May 2007

Embryos to be screened for squint [↗](#)

BBC News May 2007

First designer babies to beat breast cancer [↗](#)

The Times April 2007

Designer baby to beat risk of Alzheimer's [↗](#)

The Sunday Times April 2007

Pope speaks out against 'designer babies' [↗](#)

Reuters February 2007

Moving on from Hwang's fall [↗](#)

BBC News January 2007

Ethical row erupts over designer babies breakthrough [↗](#)

Daily Mail June 2006

Cloning 'could beat gene disease' [↗](#)

BBC News June 2006

Watchdog backs more embryo checks [↗](#)

The Times May 2006

First baby in Britain designed cancer-free [↗](#)

The Times May 2006

Watchdog backs more embryo checks [↗](#)

BBC News May 2006

Concern over 'spare part' babies [↗](#)

BBC News January 2006

Chromosome transplant in mice could provide clue to Down's syndrome illnesses [↗](#)

Guardian September 2005

Law lords back 'designer babies' [↗](#)

SocietyGuardian.co.uk April 2005

Babies with three parents ahead [↗](#)

Observer October 2004

'Cherry-picking' embryos [↗](#)

The Times July 2004

Dolly expert backs baby cloning [↗](#)

Daily Telegraph February 2004

'Designer baby' born to UK couple [↗](#)

BBC News June 2003

'Designer baby' ban quashed [↗](#)

BBC News April 2003

A decade on from Dolly [↗](#)

BBC News

AUDIO/VISUAL

This site contains links to websites operated by parties other than Debating Matters. Although we make every effort to ensure links are current, they will sometimes break after Topic Guide publication. If a link does not work, then the publication reference and date should enable you to find an alternate link. If you find a broken link do please send it to the **webmaster** for review.

© 2005-2021 debatingmatters.com: Debating Matters Competition, boi, Unit 208, Cocoa Studios, The Biscuit Factory, Drummond Road, London, SE16 4DG, UK

Tel +44 (0)20 3176 0827 - dm@theboi.co.uk | [admin login](#)