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# **“Saviour Sibling”**

## **Ethical and Legal Approach**

### **ABSTRACT**

The purpose of this paper is to study the ethical considerations arising from the applicability of HLA Typing. The method refers to the creation of a child, the “saviour sibling” through Preimplantation Genetic Diagnosis having compatible tissue with a diseased sibling in order to save its life. The paper aims to highlight the most important points and arguments framing the issue in order to form the evaluation criteria of the method contributing to legislation.

In the first section of the work describing the biomedical framework concerning the new method, the purpose is to investigate the causes and conditions leading to the selection of this method and to evaluate the necessity of its application. In particular, indicative empirical data is registered in order to illustrate the safety and effectiveness of the method, to found the criteria and requirements for the application and to highlight the alternative option.

The second section presents the main arguments for and against the method as they emerge in the international bibliography, as well as the principles that frame them. The arguments focus on the welfare of the ‘saviour sibling’ (mental and physical), its instrumentalization, and the possibility of the technique’s implementation to consist the basis for the implementation of further controversial practices (slippery slope argument).

The opinions expressed in the bibliography provide the reason for addressing the issue and assessing the technique according to Kantian ethics. The frequent reference to the famous dictum of Kant which is based on misreading and misunderstanding of its categorical imperative constitutes the essential core of the debate-dialogue on the creation of ‘savior sibling’. Therefore, the analysis and interpretation of The above phrase seemed appropriate, in order to highlight its real content and meaning, which seems to differ from its signification in the context of the debate on the ‘savior sibling’. The interpretation of the categorical imperative which refers to humanity and

the analysis of Kant's duties system may contribute to the formation of the technique's evaluation criteria. This analysis helps us perceive what actions are those that make the creation of a compatible child act incompatible with human nature and what actions may reinforce it.

Finally, it was considered inevitable to investigate the legalization of the method in Greece (although this has not been explicitly regulated by law). After a brief reference on how the method was addressed in the UK, it is examined if the application of the technique is in accordance with Greek legislation and whether it is consistent with the principles and spirit of the relevant laws. In conclusion, the legislative regulation and the application of alternative models of thought and action to treat health problems is proposed.

- ABSTRACT.....	3
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(slippery slope).....	36
(instrumentalization) .....	38
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GVHD	Graft Versus Host Disease
HFEA	Human Fertilisation and Embryology Authority
HLA	Human Leukocyte Antigens
PGD	Preimplantation Genetic Diagnosis



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*Between conception  
and creation  
between existence  
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Falls the Shadow*

T. S. Eliot

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 , μ μ μ GVHD(Graft Versus Host  
 Disease) (Pennings 2002, Sasazuki et al 1998).

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 μ μ (Sullivan et al 1991).

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<sup>1</sup> μ μ , <http://www.eom.gr>

$\mu$  (Hematopoietic Stem Cells)<sup>2</sup>

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<sup>3</sup> National Marrow Donor Program (NMDP), <http://www.marlow.org/>



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GVHD (Rocha et al, 2006).

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<sup>4</sup> [http://iatriki-genetiki.med.uoa.gr/parexomenes\\_ypiresies/pgd.htm](http://iatriki-genetiki.med.uoa.gr/parexomenes_ypiresies/pgd.htm)



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 Pihkala et al.2001, Gluckman et al,1997, Rubinstain, 2006). ,  
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μ μ μ 1/4 (25%), μ

μ μ μ 3/16 (19%), 1/8

μ μ μ HLA. μ

μ μ (Kahraman

et al 2011) μ 2003-2010 μ

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262 μ μ

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μ μ μ 2008 (Van de Velde et al 2009),

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<sup>9</sup> [http:// www.bioethics.gr](http://www.bioethics.gr)







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 Wilkinson, 2003).

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<sup>13</sup> 'non-identity' problem, Parfit,

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 μ μ (Jecker, 1990). ,  
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. μ (Slippery slope argument)

μ μ «savior siblings»  
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 μ (Sheldon and Wilkinson 2003).  
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<sup>14</sup> μ μ , μ μ μ μ μ μ μ μ (Wolf, 2003).  
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**(instrumentalization of donor child)**

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(Wood, 1998, 13).













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(duty of self-perfection) )

(duty to promote the happiness of others) (Kant, MM, 1991),

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 CORE(Comment on Reproductive Ethics).

CORE : ) μ μ ,  
 μ , ) 'treatment services'  
 μ ) μ  
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 'necessary or desirable for the purpose of assisting women to carry children',  
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μ 'suitable' condition<sup>16</sup>.  
 CORE μ ,  
 2003, HFEA μ μ . 'suitable'  
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 ( , 2007).  
 μ HFEA  
 Whitaker<sup>17</sup>, DBA (Diamond  
 Blackfan Anaemia), ,  
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 μ μ μ Charlie  
 μ μ μ Hashmi,  
 Whitaker Hashmi,  
 Hashmi μ  
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<sup>16</sup> «practices designed to secure that the embryos are in a suitable condition to be placed in a woman or to determine whether embryos are suitable for that purpose»

<sup>17</sup> <http://www.hfea.gov.uk/935.html>

<sup>18</sup> [http://www.prochoiceforum.org.uk/irl\\_rep\\_tech\\_2.php](http://www.prochoiceforum.org.uk/irl_rep_tech_2.php)

<sup>19</sup> <http://www.ccels.cf.ac.uk/archives/issues/2005/gunningmay.pdf>



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 (Bateman, 2002, .326).  
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Akihide Yoshimi, Yasuhito Nannya et al, Successful Hematopoietic Stem Cell Transplantation from an HLA-Identical Sibling in a Patient with Aplastic Anemia after HLA-Haploidentical Living-Related Liver Transplantation for Fulminant Hepatitis, *Biology of Blood and Marrow Transplantation* 2009, 15(3), 389-390

Amy T. Y. Lai, Ph. D., J.D., “To be or not to be my sister’s keeper?”, *The Journal of Legal Medicine* 2011, 261-293

Baetens P, Van de Velde, HLA-matched embryos selected for siblings requiring haematopoietic stem cell transplantation: a psychological perspective, *Reproductive BioMedicine Online* 2005, 10(2),154-163

Barker JN, Umbilical Cord Blood (UCB) Transplantation: An Alternative to the Use of Unrelated Volunteer Donors?, *Hematology Am Soc Hematol Educ Program* 2007, 55-61

Bateman, When reproductive freedom encounters medical responsibility: changing conceptions of reproductive choice, *Current Practices and Controversies in Assisted Reproduction*, . 326, .2, 2002, μ [www.who.int](http://www.who.int)

Bellavia Marina, Von Der Weid Nicolas et al, Preimplantation genetic diagnosis (PGD) for HLA typing: bases for setting up an open international collaboration when PGD is not available. *Fertility and Sterility* 2010, 94(3),1129–1131

Bojanic I, Golubic Cepulic B, Umbilical cord blood as a source of stem cells, *Acta Med Croatica* 2006, 60(3), 215-25

Boyle R.J, Savulescu J, Ethics of using preimplantation genetic diagnosis to select a stem cell donor for an existing person, *BMJ* 2001, 1240-3

Clark R.D., Fletcher J. and Petersen G., Conceiving a fetus for bone marrow donation: an ethical problem in prenatal diagnosis, *Prenatal Diagnosis* 1989, 9, 329-334

Copelan EA, Hematopoietic stem-cell transplantation, *N Engl J Med* 2006, 354, 1813-1826

Devolder K, Preimplantation HLA typing: having children to save our loved ones, *J Med Ethics* 2005, 582-586

De Wert G, Liebaers I, Van de Velde H, The future (R)evolution of preimplantation Genetic Diagnosis/ Human Leukocyte Antigen Testing: Ethical Reflections, *Stem Sells* 2007, 2167-2172

Dickens B.M, Preimplantation genetic diagnosis and savior sibling, *International Journal of Gynecology and Obstetrics* 2005, 88, 91-96

Dong-Zhi Li, The production of a 'saviour sibling' in mainland China, *Prenatal Diagnosis* 2009, 29, 1186

Edwards RG, Ethics of PGD: thoughts on the consequences of typing HLA in embryos, *Reproductive BioMedicine Online* 2004, 9(2)222-224

Gerrand N, Creating embryos for research, *J. Applied Phil* 1993, 10, 175-187

Gluckman E, Broxmeyer HE, Auerbach AD et al, Hematopoieticreconstitution in a patient with Fanconi's anemia by means of umbilical cord blood from an HLA-identical sibling, *N Engl J Med* 1989, 321(17),1174-8

Goussetis E, Konialis C et al, Successful Hematopoietic Stem Cell Transplantation in 2 Children with X-Linked Chronic Granulomatous Disease from Their Unaffected HLA-Identical Siblings Selected Using Preimplantation Genetic Diagnosis Combined with HLA Typing, *Biol Blood Marrow Transplant* 2010,16, 344-349

Halter J, Kodera Y et al, Severe events in donors after allogeneic hematopoietic stem cell donation, *Haematologica* 2009, 94, 94-101

Hsia CC, Linenberger M et al, Acute myeloid leukemia in a healthy hematopoietic stem cell donor following past exposure to a short course of G-CSF, *Bone Marrow Transplantation* 2008, 42, 431-432

Jecker N.S, Conceiving a child to save a child: reproductive and filial ethics, J. Clin. Ethics 1990, 1 , 99-103

Kant I, The Metaphysics of Morals, Cambridge University Press 1991

Kahraman S, Findikli N et al, Medical and social perspectives of PGD for single gene disorders and human leukocyte antigen typing Original Research Article Reproductive BioMedicine Online 2007 4(1), 104-108

Kahraman S, Karlikaya G et al, Clinical aspects of preimplantation genetic diagnosis for single gene disorders combined with HLA typing, Original Research Article Reproductive BioMedicine Online 2004, 9(5), 529-532

Kahraman S, Beyazyurek C, Seven years of experience of preimplantation HLA typing: a clinical overview of 327 cycles Original Research Article Reproductive BioMedicine Online 2011, 23, (3), 363-371

Karabon L, Polak M, HLA typing for donor-recipient matching in unrelated donor hematopoietic stem cell transplantation, Transplantation Proceedings 2002, 34, (2), 668-670

Kearney W. and Caplan A.L., Parity for the donation of bone marrow: ethical and policy considerations, In Blank, R.H. and Bonnicksen A.L. (eds) Emerging issues in biomedical policy, 1, Genetic and Reproductive Technologies, Columbia University Press, N.Y. 1992, 263-25

Kuliev A, Verlinsky Y, Preimplantation HLA typing and stem cell transplantation: report of International Meeting, Cyprus, 27-28 March, 2004 Reproductive BioMedicine Online 2004, 9, (2) 205-209

Kuliev A, Rechitsky S, Preimplantation diagnosis and HLA typing for haemoglobin disorders, Reproductive BioMedicine Online 2005, 11, (3) 362-370

Kurtzberg J, Graham M, Casey J, Olson J, Stevens CE, Rubinstein P, The use of umbilical cord blood in mismatched related and unrelated hemopoietic stem cell transplantation, *Blood Cells* 1994, 20, 275

Liu C.K, 'Saviour Siblings'? The Distinction between PGD with HLA Tissue Typing and Preimplantation HLA Tissue Typing, *Bioethical Inquiry* 2007,65–70

Mercer JS, Vohr BR, McGrath MM et al, Delayed cord clamping in very preterm infants reduces the incidence of intraventricular hemorrhage and late onset sepsis: A randomised controlled trial, *Pediatrics* 2006,117, 1235-1242

Cheila A.M. McLean, *First do not Harm: Law, Ethics and Healthcare*, 2006

Norton V.G., Unnatural selection: non therapeutic preimplantation genetic screening and proposed regulation, *UCLA Law Rev*,1994, 41, 1581-1650

O' Neill O, *Kant:Rationality as Practical Reason*, Oxford University Press 2004

Packman WL, Psychosocial impact of pediatric BMT on siblings, *Bone Marrow Transplantation* 1999, 24, 701–706

Parfit D, *Reasons and Persons*, Oxford, Clarendon, 1984

Pennings G, Schots R and Liebaers I, Ethical considerations on preimplantation genetic diagnosis for HLA typing to match a future child as a donor of haematopoietic stem cells to a sibling, *Human reproduction* 2002, 17, 534-537

Pennings G, Saviour siblings: using preimplantation genetic diagnosis for tissue typing, *International Congress Series*, 2004, 1266, 311-317

Pentz R.D. Haight A.E, Noll Robert B., Barfielded R, Pelletier W, Davies S, Alderfer, M.A., Hinds P.S., The Ethical Justification for Minor Sibling Bone Marrow Donation: A Case Study, *The Oncologist* 2008,13,148–151

Pentz et al, The Ethical Justification for Minor Sibling Bone Marrow Donation: A Case Study, *The Oncologist* 2008, 13,148-151.

Rabe H, Reynolds G, Diaz Rossello J, Early versus delayed umbilical cord clamping in preterm infants, *Cochrane Database Syst Rev* 2004, 4,CD003248

Ram N.R., Britain's new preimplantation tissue typing policy: an ethical defence, *Law, ethics and medicine, J Med Ethics* 2006, 32, 278-282

Rechitsky S, Kuliev A, Preimplantation genetic diagnosis with HLA matching, *Reproductive BioMedicine Online* 2004, 9, (2) 210-221

Rechitsky S, Kuliev A, Preimplantation HLA typing with aneuploidy testing, *Reproductive BioMedicine Online*, 2006, 12 (1), 2006, 89-100

Robin C, Ottersbach K, Brujin M, Ma X, Van der Horn K, Dzierzak E, Developmental origins of haematopoietic stem cells, *Oncol Res* 2003, 13(6-10), 315-21

Rocha V, Gluckman E, & Eurocord and European Blood and Marrow Transplant Group, Clinical use of umbilical cord blood hematopoietic stem cells, *Biol.Blood Marrow Transplant* 2006, 12, 34-41

Robertson J, *Children of Choice*, Princeton University Press, Princeton- Now Jersey 1994

Robertson J, Abortion to Obtain Tissue for Transplant, *Suffolk Law Review* 27, 1994, 1359-1389

Robertson J, Kahn J, Wagner J, Conception to Obtain Hematopoietic Stem Cells, , *Hastings Center Report* 32(2), 2002, 34-40

Robertson J, Extending preimplantation genetic diagnosis: the ethical debate, *Human reproduction* 2003, 18, 465-471

Robertson J, Embryo screening for tissue matching, *Fertility and Sterility*, 2004, 82(2), 290-291

- Ross L.F, Justice for children: the child as organ donor. *Bioethics* 1994, 8, 105-126
- Samuel GN, Strong KA, Kerridge I, Jordens CF, Ankeny RA, Shaw PJ, Establishing the role of pre-implantation genetic diagnosis with human leucocyte antigen typing: what place do "saviour siblings" have in paediatric transplantation?, *Pubmed* 2009, 94(4) 317-20
- Sasazuki T, Juji T, Morishima Y et al, Effect of matching of class I HLA alleles on clinical outcome after transplantation of hematopoietic stem cells from an unrelated donor, *N. Engl. J. Med* 1998, 339, 1177-1185
- Satkiran S. Grewal, Jeffrey P. Kahn, Margaret L. MacMillan, Norma K. C. Ramsay, and John E. Wagner, Successful hematopoietic stem cell transplantation for Fanconi anemia from an unaffected HLA-genotype-identical sibling selected using preimplantation genetic diagnosis, [bloodjournal.hematologylibrary.org](http://bloodjournal.hematologylibrary.org) by guest on February 25, 2012
- Savulescu J, Substantial harm but substantial benefit, *Br. Med. J.* 1996, 312, 241-242
- Sermon K, Van Steirteghem A, Liebaers I, Preimplantation genetic diagnosis, *Lancet* 363, 2004, 1633-41
- Sharpe V.A, To what extent should we think of our intimates as 'persons'? Commentary on 'Conceiving a child', *J. Clin. Ethics* 1990, 1, 103-107
- Shee-Uan Chen, Yi-Ning et al, PGD of  $\beta$ -thalassaemia and HLA haplotypes using OmniPlex whole genome amplification, *Reproductive BioMedicine Online* 2008, 17(5) 699-705
- Sheldon S, Wilkinson S, Should selecting saviour siblings be banned?, *J Med Ethics*, 2004, 533-537
- Shih-Ning, Young children as regenerative tissue donors: considering the need for legal reform in light of divergent ethical approaches, *Journal of Law and Medicine* 2011, 19(1), 172-195
- Sparrow R, Cram D, Saviour embryos? Preimplantation genetic diagnosis as a therapeutic technology, *Reproductive Healthcare*, Elsevier 2009, 667-674



Spriggs M, Is conceiving a child to benefit another against the interests of the new child? *Journal of Medical Ethics*, 31, 341-342

Spriggs M, Savulescu J, Saviour Siblings, *J Med Ethics*, 2002, 28,289

Suia S, and Sleeboom-Faulkner M, Choosing offspring: prenatal genetic testing for thalassaemia and the production of a 'saviour sibling' in China, *Culture, Health & Sexuality* 2010, 12 (2), 167–175

Sullivan K.M, Agura E, Anasetti C et al, Chronic graft- versus- host disease and other late complications of bone marrow transplantation, *Semin. Hematol* 1991, 28,250-259

Staessen C, Platteau P, Van Assche E, Michielss H, Tournaye M DEvroye P , Liebaers I , Van Steirteghem A , Comparison of blasocyt transfer with or without Preimplantation genetic diagnosis for aneuploidy screening in couples with advanced maternal age: a perspective randomizes controlled trials, *Hum Rep advance access* 2004

Styczynski J, Balduzzi A et al, Risk of complications during hematopoietic stem cell collection in pediatric sibling donors: a prospective European Group for Blood and Marrow Transplantation Pediatric Diseases Working Party study, *BLOOD*, 2012, 12, 119

Szydlo R, Goldman JM et al, Results of allogeneic bone marrow transplants for leukemia using donors other than HLA-identical siblings, *J Clin Oncol*, 1997, 15, 1767-77

Timmons M, *Moral Theory. An Introduction*, Rowman & Littlefield Publishers 2013

Van de Velde H, Georgiou I, De Rycke M, et al. Novel universal approach for preimplantation genetic diagnosis of b-thalassemiain combination with HLA matching of embryos, *Human Reproduction* 2004,19,700-708.

Van de Velde H, De Rycke M, De Man C, et al. The experience of two European preimplantation genetic diagnosis centres on human leukocyte antigen typing. *Human Reproduction* 2009,24, 732-740

Verpoest W., PGD and HLA matching: not a quick fix *Reproductive BioMedicine Online* 2011,23(3) 271-27

Wagner J.E, Designer babies - are they a reality yet?: Comment on “Case report: simultaneous preimplantation genetic diagnosis for Fanconi anaemia and HLA typing for cord blood transplantation” by Yury Verlinsky et al. Reproductive BioMedicine Online 2000, 1(2), 31

Wolf S.M, Kahn J.P, Wagner J.E, Using preimplantation genetic diagnosis to create a stem cell donor: Issues, Guidelines and limits, J Law Med Ethics 2003, 31, 327-339  
Susan W, Green R et al, The Psychosocial Aspects of Donating Blood Stem Cells: The Sibling Donor Perspective, Journal of Clinical Apheresis 2003,18,1-9

Wood A.W, Kant on Duties Regarding Nonrational Nature, Proceedings of the Aristotelian Society, 1998

Wood A.W, Duties to Oneself, Duties of Respect to Others, Stanford University

Wagner J.E, Designer babies - are they a reality yet?: Comment on “Case report: simultaneous preimplantation genetic diagnosis for Fanconi anaemia and HLA typing for cord blood transplantation” by Yury Verlinsky et al. Reproductive BioMedicine Online 2000, 1(2), 31

Wolf S.M, Kahn J.P, Wagner J.E, Using preimplantation genetic diagnosis to create a stem cell donor: Issues, Guidelines and limits, J Law Med Ethics 2003, 31, 327-339

Susan W, Green R et al, The Psychosocial Aspects of Donating Blood Stem Cells: The Sibling Donor Perspective, Journal of Clinical Apheresis 2003,18,1-9

Wood A.W, Kant on Duties Regarding Nonrational Nature, Proceedings of the Aristotelian Society, 1998

Wood A.W, Duties to Oneself, Duties of Respect to Others, Stanford University

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 μ 3089/2002 ( 327),  
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<http://www.hfea.gov.uk/HFEAGuidance/ChairsLettersArchive/2003-2004>

[http://www.bionews.org.uk/page\\_11655.asp](http://www.bionews.org.uk/page_11655.asp)

[http://www.prochoiceforum.org.uk/irl\\_rep\\_tech\\_2.php](http://www.prochoiceforum.org.uk/irl_rep_tech_2.php)

<http://www.ccels.cf.ac.uk/archives/issues/2005/gunningmay.pdf>

<http://www.marow.org/>

<http://www.eom.gr>

<http://www.bioethics.gr>

[http://iatriki-genetiki.med.uoa.gr/parexomenes\\_ypiresies/pgd.htm](http://iatriki-genetiki.med.uoa.gr/parexomenes_ypiresies/pgd.htm)