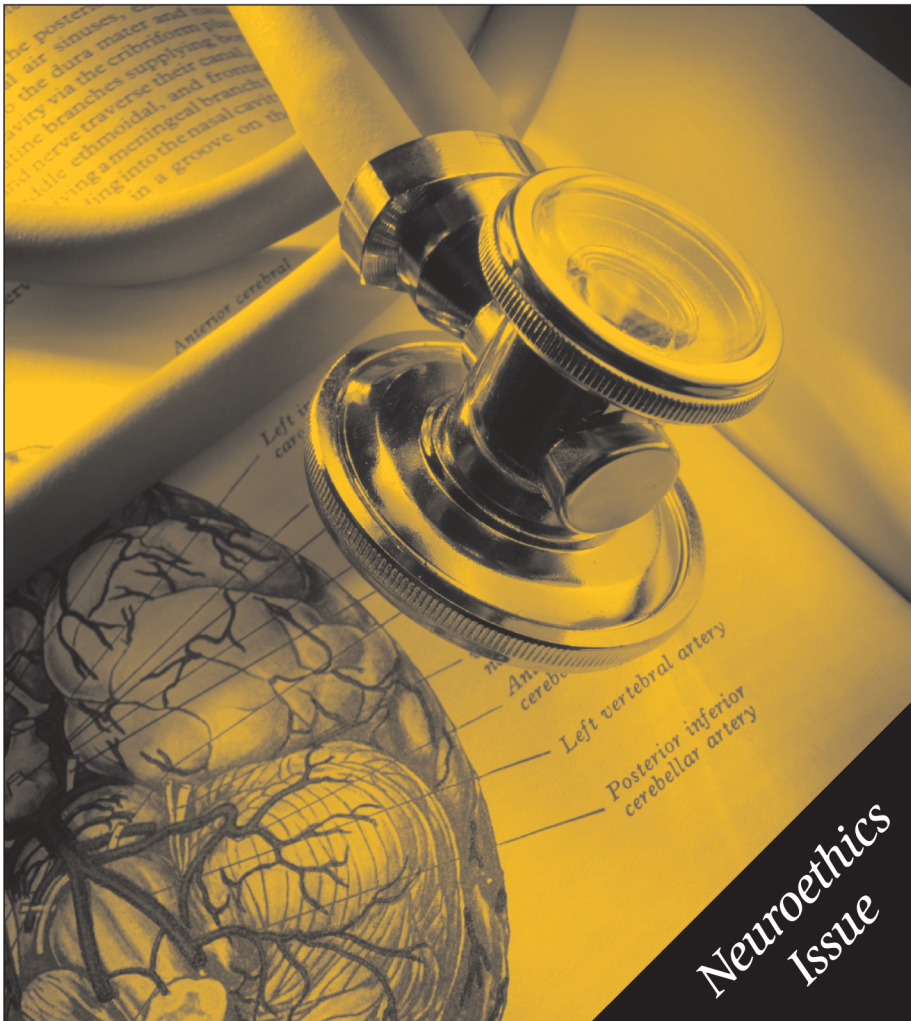


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# Ethics & Medicine

An International Journal of Bioethics

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EDITORIAL

## SCIENTISTS, ETHICS, AND PUBLIC ENGAGEMENT

C. BEN MITCHELL, PHD

In a refreshingly candid “point of view” piece in *The Chronicle of Higher Education* (October 1, 2006), the CEO of the American Association for the Advancement of Science (AAAS) called for scientists to make a greater effort to get to know “their fellow citizens.” Alan Leshner, who is also the executive publisher of the journal *Science*, perceptively pointed out that,

Many scientists argue that the solution to the tension between science and society is to increase public understanding of science. But the problem is not simply a lack of comprehension. The case of stem-cell research is instructive: It is not that opponents do not understand somatic-cell nuclear transfer; they do grasp the fundamental nature of the process, and they don’t like it. The notion of destroying an embryo, no matter how noble the cause, conflicts with their core religious beliefs about when life begins, and its sanctity. More education would not be enough.

Simply lamenting the tension or protesting attacks on the integrity of science and science education won’t work, either. We’ve been doing those for decades, if not centuries, and, as the saying has it, insanity is doing the same thing over and over and expecting a different outcome. <sup>E&M</sup>

Instead of simply increasing public understanding of science, scientists need to have a real dialogue with members of the public, listening to their concerns, their priorities, and the questions they would like us to help answer. We also need to find ways to move science forward while adapting to their legitimate concerns.<sup>1</sup>

I could not agree with him more. Scientific research must not be done in the shadows. Science must be done in full view and in conversation with the citizenry who, after all, fund most of the science in this country, whether through tax funding or through consumer spending.

With so much with which I agree with Dr. Leshner, one almost laments having to introduce a discouraging word, but in the middle of the essay he argues that,

Credible scientists never contradict or go beyond the available data. We should never insert our personal values into discussions with the public about scientific issues. On the other hand, it is important to recognize that the rest of society is not constrained in that way and can mix facts and values at will.... No matter what a scientist believes about moral issues, if an opponent in a debate introduces values or

beliefs, the scientist should disclaim any ability to comment on those issues outside the scientific realm.

But this would make scientists schizophrenic. In one person there would be the cool-headed, “objective” scientist *and* the moral, believing animal, to borrow sociologist Christian Smith’s elegant phrase. To be a whole person these aspects must be integrated. Just as scientists should not expect the public to jettison their moral and religious beliefs in the face of the scientific discovery *du jour*, so the public should not require scientists to divest themselves of their moral and religious beliefs. And, whether they like it or not, or acknowledge it or not, every scientist has moral and religious beliefs of some sort—because, at least in part, that’s what it means to be human.

On this side of Auschwitz and Tuskegee, we cannot afford to do science without ethics. Likewise, ethics cannot be done without understanding the science. Only within the nexus between the two can genuinely ethical decisions be made.

So, I join Dr. Leshner in his call for scientists to interact with the public. And, I would argue that the general public needs to engage more fully with scientists. Scientific literacy is appallingly low in high-tech cultures like the United States and Britain. Similarly, however, ethical literacy is appallingly low in an educated culture like the Western scientific community. Instead of extricating scientists from their values, we should be helping scientists to articulate, analyze, and test their values.

Admittedly, a better educated citizenry and a better educated science community may make our public discussions messier in the short run. But in the end, I am convinced that those conversations will be more illuminating and will result in science policy that truly serves the public.

## **Endnote**

1 <http://chronicle.com/weekly/v53/i08/08b02001.htm>



GUEST COMMENTARY

## ETHICS AND GENETICS OF HUMAN BEHAVIOUR

CALUM MACKELLAR, PHD

A behaviour can often be defined as the conduct of a person, the manner and mode of action in which this person treats others and the way he or she responds to a stimulus.<sup>1</sup> Characterising the behaviour of a person is therefore not a simple affair, with any research in this field becoming a highly complex undertaking, including many variables such as social but also genetic effects.

However, these variables have not always been considered as having comparable weight. For example, many researchers believed, in the past, that only an environmental and social component influenced the behaviour of a person, with any biological theory of behaviour being rejected out of hand. This happened, for example, when Communists and other international socialist organisations sought to protect their egalitarian politics by repudiating any links between genetics and personal skills. The Russian geneticist, Vavilov was even allowed to die in prison in January 1943, because he maintained that every person did not have identical chromosomes, a conclusion based on heredity, which was seen as being in conflict with the ideologies, at the time, of the USSR.<sup>2</sup>

In the same way, others were concerned that new information resulting from behavioural genetics would support a perceived reductionist threat in which all personal characteristics were explained by chemical and physical laws. These concerns resulted in a situation in which any suggestion of a genetic component to behaviour was automatically ridiculed, derided or considered as racist. The Nobel Prize winner Konrad Lorenz was sometimes even vilified at the end of the 20<sup>th</sup> century, because his discoveries in inherited animal behaviour had been used by others to support racist ideas.

These examples demonstrate that research in the genetics of human behaviour can become a very sensitive and complex political issue. It has even been discouraged, in the past, as being potentially dangerous and disruptive to society. This has especially been the case with research relating to intelligence, aggression, antisocial behaviour, anxiety, novelty-seeking, alcoholism, addiction, obesity, and homosexuality.<sup>3</sup>

However, though research in this field has often been contentious, scientific results in this domain, as in any other scientific discipline, should not be confused with the possible use of these results by individuals or society. As was stated in a recent UK House of Lords' report, entitled *Science and Society*, "Knowledge obtained through scientific investigation does not in itself have a moral

*dimension; but the ways in which it is pursued, and the applications to which it may be put, inevitably engage with morality.*"<sup>4</sup> In other words, even though science in itself can be considered as neutral, the applications of science, on the other hand, should be carefully examined while balancing any advantages with the possible risks involved.

One example of the advantages relating to the 'medicalisation' of some behavioural characteristics can be demonstrated in some cases of schizophrenia, when these were shown to be related to genetic factors and not just the result of a certain kind of upbringing. Indeed parents of children with schizophrenia were often noticed to welcome these findings. This means that for some traits in which a certain amount of stigma is attached, the 'medicalisation' of the traits could confirm the personal 'innocence' of those in the past considered responsible for the existence of these traits.<sup>5</sup>

However, this 'medicalisation' of a behaviour may also have its disadvantages, since some individuals could be led to believe that nothing could be done with a certain trait because of its genetic origin. A kind of hopelessness and fatalism may then occur in affected persons as well as in those around them.

For example, Mark Rothstein states that if one assumes that there is a genetic component to alcoholism, then "*[on] the one hand, it could be argued that the genetic component vitiates the moral taint from individuals with alcoholism. On the other hand, the genetic, heritable nature of the disorder may increase the stigma associated with alcoholism; it may increase the pressure for genetic screening for the mutation; it may contribute to individuals feeling a sense of resignation and a reluctance to enter treatment; and it may lead to disdain for individuals who, despite knowledge that they have the mutation, proceed to drink nonetheless.*"<sup>6</sup>

Another concern relates to the possibility of discrimination, which may arise from studies in behavioural genetics. This could exist as a form of negative discrimination in which a person may be disadvantaged, bullied or even persecuted because of a genetic behavioural difference over which he or she has no control. Positive discrimination, on the other hand, may take place when persons are selected because of some specific unearned trait. For example, many will, and should, enjoy the recognition and appreciation given by their peers for traits such as charisma, intelligence or even eloquence at committee meetings, but these individuals should also remember that no real effort was made, on their part, to obtain these genetic characteristics. In other words, no additional special respect should, theoretically, be bestowed on these persons just because of their capacities.

Too often in our societies, relationships between individuals are seen as being competitive. This has arisen because many modern biological theories defending the survival of the fittest and the hierarchies of status wealth and power, in all walks of life, have been accepted without critical judgement. But this may not be a true reflection of biology. Indeed, society could also be considered as a system whereby every person exists to complement each other's gifts and capabilities (be they genetic or otherwise). This would then

resemble the 'society' of 100 trillion cells which make-up a human person, whereby each cell complements the other without competition. In fact, in such a representation, competitive discrimination would only be found in diseased or cancerous cells.

Results obtained from research in behavioural genetics should, therefore, not be shunned by ethical commentators but considered, instead, as an opportunity to encourage members of society to become more tolerant and compassionate towards each other in a spirit of solidarity. However, this would only be possible if the scientific results are explained and presented in the appropriate manner and in the right context. If genetic behavioural results are presented in an unbalanced and irresponsible manner and misused as a means to providing arguments for racism, discrimination and eugenic selection, then serious social problems will become inevitable. E&M

## Endnotes

- 1 *Concise English Dictionary*, Wordsworth Editions Ltd, 1994.
- 2 Wikipedia, Nikolai Vavilov, <http://en.wikipedia.org/wiki/Vavilov>
- 3 *Genetic and Human Behaviour : the ethical context*, Public consultation document, Nuffield Council on Bioethics, July 2001.
- 4 *Select Committee on Science and Technology, House of Lords, Science and Society, Third Report, 23 February 2000, Public attitudes and values (Chapter 2)*, 4 ; <http://www.publications.parliament.uk/pa/ld199900/ldselect/ldsctech/38/3802.htm>
- 5 Mark Rothstein, *Behavioural Genetic Determinism, Its Effects on Culture and Law in Behaviour Genetic, The Clash of Culture and Biology*, edited by R. Carson and M. Rothstein. 1999. Baltimore: The John Hopkins University Press.
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ETHICS & MEDICINE

GUEST COMMENTARY

## EDUCATION AND PRACTICE OF MEDICAL ETHICS IN BULGARIA AFTER POLITICAL AND SOCIO-ECONOMIC CHANGES IN THE 90'S

BORISLAV D. DIMITROV, MD, MSC, SM, PHD

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Social and economic changes in Bulgaria are a continuous process of transformation of the way of thinking, attitudes and behaviours towards an open society of liberty, free-market economy and democratic values. The political events at the end of the landmark year of 1989 and during the following months have given hope and expectancies to all the people for better life and prospective future. These transitions influenced in an unprecedented manner all sectors of the societal organisation as well as every single aspect of life, education, practice and professional endeavours. Undoubtedly, this socio-economic process required a new vision for the development of the whole system of health care delivery, organisation and medical education. As a matter of fact, single hours of teaching medical ethics existed within the undergraduate curriculum of Social Medicine before 1989. Within such dynamic and challenging environment of the societal transition, however, a separate curriculum on medical ethics in Bulgarian medical schools was badly needed. At that time, the initial isolated attempts to introduce hours or short courses on medical ethics were lacking not only of infrastructure but also of a systematic, theoretically sound and evidence-based approach corresponding to the mainstream development of medical ethics and its education worldwide. On the other hand, the process of the health care reform, which was envisaged to start in the mid 90's, required a synchronisation of the practice of medical ethics with the tendencies and practices in developed countries.

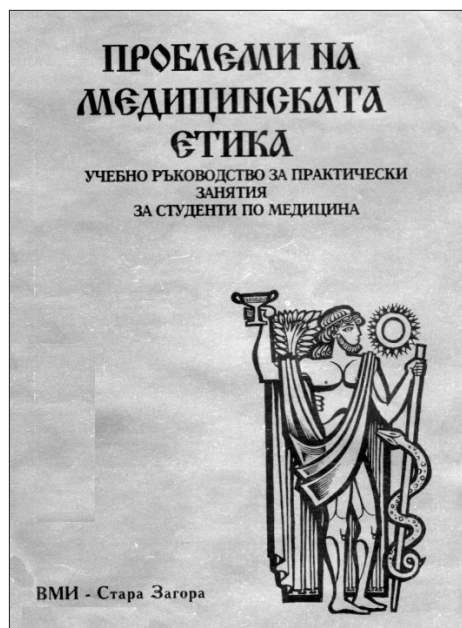
The process of introducing the education of Medical Ethics in medical schools as an indispensable part of the undergraduate medical curriculum started in the early 90's. It was strengthened by the organisation of national and international meetings and conferences in Bulgaria as well as by the attendance of courses and exchange of experience on medical ethics in France, Germany, The Netherlands, etc. by our university professors and lecturers. One good example of such a new approach is the first introduction in mid 90's of problem cases with the use of videofilms on medical ethics (as provided by the AMA and U.S. Air Force Reserve) during the practical sessions with medical students in Stara Zagora as lead by professors St. Markova, J. Marinova, S. Dimitrova and B. D. Dimitrov. This translational experience was later transferred to other medical

schools in Bulgaria as supported by internationally recognised research activity (e.g., patients and the “coping” problem; physicians and the moral of medical profession; opinions and attitude of medical students,<sup>1</sup> etc.). Some of the landmark events in the education of medical ethics have been summarised (see Table below), starting with the publication of the first handbook on medical ethics in Bulgarian language (see Figure below).<sup>2</sup>

**Table:** Some of the landmark events in the education of medical ethics in Bulgaria after the political and socio-economic changes in 90's

Event	Year	Place	Reference
Introduction of medical ethics in the curriculum of medical schools	Early 90's	All schools	n.a.
Publication of the first handbook on medical ethics in Bulgarian language	1993	Stara Zagora	Marinova <i>et al</i> <sup>2</sup>
Publication of textbooks and handbooks on medical ethics in Bulgarian language	1994-2001	Plovdiv, Sofia, Pleven	Ljochkova <i>et al</i> , <sup>3</sup> Vodenicharov <i>et al</i> , <sup>4,5</sup> Grancharova <i>et al</i> <sup>6</sup>
Publication of the first handbook on medical ethics in English*	1999	Plovdiv	Stefanov <i>et al</i> <sup>7</sup>

\* This handbook was published to support the first course on medical ethics in English as delivered to medical students from India (Higher Medical Institute, Plovdiv)



The present curriculum for medical students and nurses is uniform among all medical schools and consists of general and specific parts. The general part includes topics such as “Principles and codes of medical ethics”, “Models of the relationships between doctors and patients”, “Patients’ rights”, etc. The special part includes ethical aspects of various practical issues such as “Problems of reproduction”, “Problems of chronically-ill patients”, “Terminal care”, “Palliative care”, “Euthanasia and assisted suicide”, “Donors and transplantation”, “Biotechnologies and genetic screening”, etc. New modules are now being developed to complement the special part with such problematic and specific issues as health-related quality of life of

patients, production and use of genetically-engineered cells and tissues (e.g., stem-cell research), benefits and drawbacks of the participation of patients in clinical trials, ethics of promotion of healthy products and providing health information or medical advice through Internet, etc.

The attitude of physicians and other allied-health professionals towards the education of medical ethics has improved considerably over the last years, as evidenced by the ever-increasing number of postgraduate courses and seminars on medical ethics all over the country. In this sense, the unbelievable interest to and attendance of the specialised postgraduate seminars on medical ethics, as lead by professors M. Ljochkova and B. D. Dimitrov (Plovdiv), by practicing nurses from the Higher Medical Institute, might be seen as one of the many good examples for the changing attitude of medical professionals towards the education and practical problems of medical ethics. For instance, the nurses were most active in debates on palliative care, euthanasia, shared decision-making at situations with terminally ill patients, etc. The problems with continued education on medical ethics are still related, however, to the lack of sufficient amounts of relevant periodic and review literature in Bulgarian language (or, e.g., translation of such from abroad) and of regular access to foreign periodicals (either through Internet or in a print version, or both).

The practice of medical ethics in Bulgaria is closely related to the quality of education, and its improvement during these last years might be seen as a consequence of the systematic and consistent improvement of the process of delivery of evidence-based knowledge on medical ethics at both the undergraduate and postgraduate level. Among the basic principles of the health care reform in Bulgaria are those related to the ethical values and patients' rights, such as respect and protection of human dignity, solidarity and professional attitude and behavior. These postulates are incorporated into the clauses of The Law of People's Health, National Contract for Health Insurance and the Codes of Professional Associations of Physicians, of Dentists and of Nurses. The most important part is that concerning the issue of "*Patient's Rights*" with such postulates as the access to the best available treatment, free choice of general practitioner, informed consent, confidentiality of patients files, quality of life, etc. Also, the patients are protected by the law from any form of physical, moral and professional abuse and malpractice. The controlling mechanisms for dealing with complaints and potential malpractice and abuse are executed through the professional associations of the physicians, dentists or nurses and their governing bodies. Also in recent years, research in practice on health-related quality of life (HRQOL) of patients was initiated by specialists in Sofia, Plovdiv and Pleven. As an example, the first doctoral study on HRQOL in Bulgaria, being undertaken by the clinician and surgeon Dr G. Stefanov under the supervision of professors Glutnikova and Kiryakov (Sofia), has introduced and applied, for the first time, the standardised U.S. SF-36/SF-12 questionnaires to Bulgarian patients on periodic haemodialysis.<sup>8</sup> E&M

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CLINICAL ETHICS DILEMMAS

## PERMISSIBILITY TO STOP MAN'S VENTILATOR ON HIS REQUEST

JOHN DUNLOP, MD

**Editor's Note:** *The following consultation report is based on a real clinical dilemma that led to a request for an ethics consultation. Some details have been changed to preserve patient privacy. The goal of this column is to address ethical dilemmas faced by patients, families and healthcare professionals, offering careful analysis and recommendations that are consistent with biblical standards. The format and length are intended to simulate an actual consultation report that might appear in a clinical record and are not intended to be an exhaustive discussion of the issues raised.*

**Column editor:** Robert D. Orr, MD, CM, Consultant in Clinical Ethics, CBHD.

### Question

Is it ethically permissible to stop this man's ventilator at his request?

### Case

This 76 year old retired minister had an acute myocardial infarction (heart attack) 18 months ago and transient vertebro-basilar insufficiency (interruption of circulation to the base of the brain causing temporary loss of function) 1 year ago. These neurological symptoms cleared quickly and he did well for 10 months.

He was admitted to this hospital 2 months ago with unstable angina, and 1 week after admission he had a 3-vessel coronary artery by-pass grafting. His post-operative course has been complicated by quadriplegia (complete paralysis of all 4 extremities), recurrent sepsis caused by different organisms, acute kidney failure (now resolved) and Adult Respiratory Distress Syndrome (ARDS). He is now medically unstable (continuing infection; requires medication to sustain low blood pressure) and is ventilator-dependent. The latter is not from the ARDS but from lack of respiratory drive, indicating that his central nervous system dysfunction has also affected his ability to breathe.

Repeated neurology consultation reports have been increasingly pessimistic about neural recovery of respiratory drive. They describe him as nearly in a "locked in" state with intact cognition, full use of cranial nerves, but minimal motor function below the C-2 level of his spinal cord. Cranial CT scanning has shown no brain infarction. It is the neurologist's impression that this represents a high cervical spinal cord lesion, most likely from an intra-operative infarction

of the spinal cord, with a dismal prognosis for recovery. This was confirmed by a CT of the spinal cord today. The ICU care-team and the neurologist believe the patient has clear understanding and decision-making capacity.

Treatment plans are being discussed. The patient has been evaluated by the Home Mechanical Ventilation team and is not a candidate because of his medical instability. He has now indicated to the ICU team that he would like to stop aggressive life-support with the expectation that he will die, and they have requested an ethics consultation.

When seen by the ethics consultant, the patient was awake, responsive and able to say a few words with his tracheostomy cuff deflated. In the presence of his wife and one son, he admitted he is discouraged, but not in pain or respiratory distress. If his cardiovascular and infection status could have been stabilized, he would have considered home mechanical ventilation, but he is now resigned to the fact that this is not possible.

### **Assessment**

This is an allegedly competent 76 year old man whose life is being sustained in the ICU by aggressive medical measures. He has expressed a desire to have those measures discontinued so that he might be allowed to die.

### **Discussion**

In almost all circumstances, the health care team should pursue the treatment goals of the competent patient if he is aware of his condition, prognosis and treatment options. There is no moral obligation for a patient to continue life that is dependent on technology when the burdens to the patient outweigh the benefits to the patient. There is no moral or legal difference between withholding and withdrawing any treatment. Prior to stopping any life-sustaining treatment at the patient's request, every effort should be made to ensure that all measures have been taken to address the burdens that the patient finds unacceptable.

This patient anticipated a routine operation with relatively small risk. Seven weeks later, he is quadriplegic and ventilator dependent from a spinal cord lesion with a very poor prognosis for improvement. He has had, and likely will continue to have, additional life-threatening complications. By any definition, this gentleman is receiving extraordinary care. He would consider going home on a ventilator if his condition were stable, but now recognizes that this is extremely unlikely to be possible. I would raise 3 questions:

- (1) Is he suffering from treatable depression, and if so, is this sufficient reason to not follow his explicit request? He admits to being discouraged, but his caregivers do not consider him depressed. One must freely grant that he is in a depressing situation. Acknowledging discouragement should not be equated with a clinical diagnosis of depression. It does not appear that he is depressed to the extent that depression is pushing him to make an unwise decision.

- (2) Does his situation indicate that meaningful life is over? No, it does not. There are many patients in situations of similar physical incapacity who continue to live meaningful lives with a focus on serving others.
- (3) Is it morally wrong to discontinue the ventilator with the expectation that he will die? We understand that the patient is a Christian, a retired minister in fact. From a Christian worldview, death is held in tension between being seen as an enemy and in Christ a defeated enemy. This patient has undergone aggressive medical therapy to fight off the enemy of death. Now that he realistically sees the end of life approaching, he is willing to affirm his faith and accept death. It is understandable and appropriate that he desires his death to be an answer to the call of God and not as the defeat of all possible medical technologies.

## Recommendations

- (a) If it is clinically feasible for this patient to leave the ICU, he should be offered a trial of care in a facility equipped to handle long-term ventilator patients. It would be appropriate to encourage him to embark on a new career of Christian service by praying for and encouraging others.
- (b) If this is not feasible or if he chooses not to do this, his request for discontinuation of the ventilator support should be honored. He should not be criticized for this. I would encourage him to summon the elders of his church to pray over him; he should be offered time with his loved ones and family; he should be given therapeutic doses of medication to relieve any distress that may be anticipated; the ventilator should be disconnected; and he should be monitored closely and given additional medication if needed.

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## Follow-up (editor)

Because of continued sepsis and low blood pressure, he was considered not sufficiently stable for transfer to a long-term ventilator facility. He chose not to continue aggressive treatment for these unstable conditions.

Four days after the ethics consultation, with his family and pastor present, he was given pre-medication with morphine and a sedative, and his ventilator was discontinued. He appeared to be comfortable with minimal additional medication, and he died in about 2 hours. **E&M**

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Advertisement



## 2007 Paul Ramsey Award Winner: William E. May

*"Husbands and wives... have a "right" to the marital act and to care for life conceived through this act, but they do not have a "right" to a child. A child is not a thing to which husbands and wives have a right. It is not a product that, by its nature, is necessarily inferior to its producers, rather a child [is] like its parents. And this is the moral problem with the laboratory generation of human life..."*  
-William E. May, PBS 1991

The Center for Bioethics and Culture Network congratulates Dr. William E. May on receiving the Paul Ramsey Award. Please join us in honoring Dr. May and his contribution to the bioethics discussion at the 4th annual Paul Ramsey Award dinner on March 30, 2007.

Dr. May is the Michael J. McGivney Professor of Moral Theology at the John Paul II Institute for Studies on Marriage and Family in Washington, D.C., where he has been teaching since 1991. In 2003 Pope John Paul II appointed May as a consultant to the Congregation for the Clergy a title bestowed by the Vatican in recognition of his work. His most recent book is *Catholic Bioethics and the Gift of Human Life 2000*.



## Continuing the Ramsey Legacy: A conversation with Edmund Pellegrino, 2004 recipient of the Paul Ramsey Award, by Jennifer Lahl, National Director of the Center for Bioethics and Culture Network

The Paul Ramsey Award dinner is an exciting time for us at CBC as we seek to publicly recognize and honor those who are continuing to influence the field of bioethics intellectually and academically. We today are the beneficiaries of the work of the late Paul Ramsey. And it is in his name this award is given each year.

Last September, I had the opportunity to chat with Dr. Edmund Pellegrino. Dr. Pellegrino received the first Paul Ramsey Award in 2004 and since then, has taken over as Chairman of the President's Council on Bioethics. The role of the council is to advise the president on "ethical issues related to advances in biomedical science and technology."

Here are some highlights of my conversation with Dr. Pellegrino:

**Lahl:** What reflections do you have on Paul Ramsey and his key contributions we are beneficiaries of today?

**Pellegrino:** Paul Ramsey was a pioneer in bioethics, one of the small group of thinkers who gave the field its start intellectually. I had the privilege of knowing him, and hearing him speak on several occasions. He engaged the most difficult issues from the point of view of Christian theology. His mark on the most serious questions in bioethics has been a permanent one.

**Lahl:** What are the biggest challenges facing us in bioethics today?

**Pellegrino:** Anyone who reads the newspaper knows that the debates about human cloning and stem cell research are everywhere. We on the President's council are dealing with issues surrounding genetic screening and organ transplantation. We need to know where we are going with technology, taking advantage of advances but mindful of the ethical constraints.

**Lahl:** What are the encouraging signs you see?

**Pellegrino:** Public awareness is increasing. The public is becoming more educated and informed which is very encouraging since these issues affect us all. As more and more Americans become aware they can have a positive influence on legislation.

*If you haven't done so already, please take this opportunity to reserve a seat at the 2007 Paul Ramsey Award dinner. The dinner will take place on March 30, 2007 at 6:00 PM at the Olympic Club Lakeside, Skyline Boulevard at John Muir Drive, San Francisco, California, 94132. Email [ramsey@cbc-network.org](mailto:ramsey@cbc-network.org) for more information. The Paul Ramsey Award is a project of the Center for Bioethics and Culture Network.*



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# EMBRYONIC STEM CELL RESEARCH: A LEGITIMATE APPLICATION OF JUST-WAR THEORY?

LUKE JOHNSON, MA

## The Problem

There is an apparent antinomy currently present within mainline political and social conservatism that, for a variety of reasons, is continually overlooked and eschewed as obsessively abstract. Tacit dismissal of the problem will no longer suffice should those adversarial to conservative views co-opt Just-War thinking in order to destroy nascent human life in the name of health and wellness. The problem runs like so. Usually, conservatives are the first to recognize the gruesome necessity of war in order to bring about a world free from menacing nations and bellicose autocrats. Conservatives have also, with great ardor, been the advocates for the most fragile amongst us—the unborn. These are surely noble principles; however, in the skillful hands of those antagonistic to this conservative philosophy, much havoc can be unleashed. Conservatives in public discourse need to be prepared should someone make the following argument.

- (1) Innocents die in war.
  - (2) Non-Pacifists believe that there are some ideals (i.e. self-defense, human rights, stability, etc...) worth fighting for at the expense of innocents.
  - (3) Health should be added to that list of ideals.
- 
- (4) Therefore, it is not contentious to declare War on disease and sacrifice tens, hundreds, or even thousands of potential persons/embryos to that just cause.

While some may chortle at this idea, I am not so sure that the argument is as ingenuous as it initially appears. The goal of this article will be to determine whether or not embryos can be killed in a war on disease, according to Just-War Theory. If it is found that Just-War Theory permits the destruction of embryos in the name of Health, then social conservatives must either accept, for the sake of consistency, experimental embryo killing or become pacifists.

It should be noted that the embryonic stem cell research that I have in mind is the sort that terminates embryos specifically held for experimentation and research of those embryos locked away in fertility clinic iceboxes.<sup>1</sup> After defining the Just-War Theory relevant to this discussion, I will argue that (1) Just-War Theory cannot be applied to the practice of destructive embryonic stem

cell research, and (2) if we take human rights seriously, no embryo can have its rights abridged for the sake of someone else's happiness or health.

## What is Just-War Theory?

### *Defining Just-War Theory*

Given the space restraints on an issue burgeoning with innumerable moral conundrums, some philosophical expediency must be practiced in order for the issue under consideration to be made intelligible. There is no textbook on Just-War Doctrine where one may simply leaf through the pages and say "A-ha, I told you that conflict X was unjust and that conflict Z is without a doubt just!" The reason for this is two-fold. Just-War Theory is a river of thought fed by many streams. The West and Christianity at large are not the only contributors to Just-War thinking. Lenin and other Marxists invented a robust Just-War Doctrine that was in line with an alien ideology, and the corresponding theory is not even conceivable unless one has fully converted to the tenets of communism. The second reason for the ongoing contentiousness of Just-War Theory is that the theory is in a continual state of flux. Each time a new military technology is unleashed or a hitherto unseen conflict breaks out, Just-War Doctrine must adapt and bring itself into congruence with the situation at hand (Miller, p.268; O'Connor, p.168).

This is not to say that a reliable, *reasonable*, and cogent explication of Just-War from the Western tradition is always beyond our reach. After culling the thinking of prominent Just-War theorists, the below doctrine of Just-War was pieced together. However, before stating and examining this doctrine, a little historical contextualization may be helpful.

Augustine held that if a war is to be considered just, the cause motivating the use of violence must be allowed by God. This means that a war that is fought solely for the aggrandizement of the belligerent state is categorically unjust. Taking Augustine's cue, Aquinas enumerated three more conditions that a Just-War must meet: (1) the war must be declared by an authoritative sovereign; (2) a just cause must exist; and, (3) those that wage the war must be directed by just intentions (Miller, p.255; Wells, p.820).

Joseph McKenna in the latter portion of the twentieth century offered the following seven revised conditions for Just-War:

- (1) the war must be declared by the duly constituted authority;
- (2) the seriousness of the injury inflicted on the enemy must be proportional to the damage suffered by the virtuous;
- (3) the injury to the aggressor must be real and immediate;
- (4) there must be a reasonable chance of winning the war;
- (5) the use of war must be the last resort;
- (6) the participants must have right intentions; and,
- (7) the means used must be moral (Wells, p.821).<sup>2</sup>

To my intellect, the Just-War axioms laid down by McKenna continue to evade what can be countenanced as a right intention for going to war. There are many isolationists and those apathetic to the plights of people beyond our own shores who stridently proclaim that military intervention can only be initiated by the right to self-defense. Given the history of the 20<sup>th</sup> century, I believe that this parochial view of military conflict is woefully lacking. Who amongst us does not lament the fact that United States did nothing to disrupt Hitler's concentration camps before Pearl Harbor? Or if one needs a more contemporary reference, the United States' apathy towards the innocents slaughtered in Rwanda's civil war serves as a good reminder. It seems that any reasonable justification for war must take into account the Human Rights abuses practiced by a regime that does not immediately affect the security of our homeland. This is why I've gravitated towards the thinking of David Luban to expand the sixth point in McKenna's revised doctrine.

If we take the idea of human rights seriously, then I agree with Luban that security rights (freedom from ethnic cleansing, secret police, genocide, etc.) and subsistence rights (freedom from abject impoverishment and famine) are worth fighting and dying for. With this in mind, I present a synthesis of McKenna's and Luban's views below (see figure 1). Other amendments to McKenna's original doctrine have been made so as to anticipate future objections. For the time being, our interests should be focused on the sixth proposition and the newly added sub-categories <6(a) and 6(b)>. Further additions will be explained momentarily (Luban, p.175).

*Figure 1: The Revised Just-War Theory*

- (1) "the war must be declared by the duly constituted authority;" (Wells, p.821).
  - (a) Meaning that a legitimate governmental head declares the war and that the head of the state rules via the consent of the governed.
- (2) "the seriousness of the injury inflicted on the enemy must be proportional to the damage suffered by the virtuous;" (Wells, p.821).
  - (a) Damage done to the enemy that exceeds the wrong inflicted upon the just party goes beyond the moral use of coercion.
- (3) "the injury to the aggressor must be real and immediate;" (Wells, p.821).
  - (a) Use of weapons that go beyond the cessation of a combatant's threat levels are morally impermissible. Chemical weapons or any other devices that seek to disfigure or traumatize the combatant psychologically, inflict a punishment that goes further than the hostile environment combatants find themselves within. These weapons continue to afflict the soldier long after the war has ended, causing undue suffering to a man now in civilian life. (Nagel, p.141).

- (4) “there must be a reasonable chance of winning the war;” (Wells, p.821).
  - (a) A protracted conflict diminishes the chances that the right intentions motivating the war will ever bring about a much desired just peace.
- (5) “the use of war must be the last resort;” (Wells, p.821).
  - (a) A war cannot be just if real bloodless alternatives existed to bring about the just end.
- (6) “the participants must have right intentions;” (Wells, p.821). These include;
  - (a) “A just war is (i) a war in defense of socially basic human rights (subject to proportionality); or (ii) a war of self-defense against an unjust war.” (Luban, p.175).
  - (b) “An unjust war is (i) a war subversive of human rights, whether socially basic or not, which is also (ii) not a war in defense of socially basic human rights” (Luban, p.175).
- (7) “and the means used must be moral” (Wells, p.821).
  - (a) Non-combatants, even if they provide aid and comfort to the enemy, may not be killed if they are not determined to be a direct threat. To kill non-combatants, in the midst of war, is to kill beyond the established scope of self-defense (Nagel, p.139-140), (Fullinwider, p. 94).
  - (b) Combatants, though they may be morally innocent conscripts, can be killed because they do pose an immediate threat (Nagel, p.139-140).

Much ambiguity remains in the Just-War Doctrine outlined. Some will have a hard time trying to determine when a means (an act of killing) in wartime can be deemed ‘moral’. Also, why must the injury inflicted against an aggressor be real and immediate? Nagel and Fullinwider proffer sensible answers to these disconcerting concerns, and I believe they have been sufficiently itemized in our above chart <see 3(a) and 7(a) and 7(b)> At the risk of appearing glib, axioms 1, 1(a), 2, 2(a), 4, 4(a), 5, 5(a) of the above Just-War Doctrine appear self-evident, and for our purposes, can go without further exegesis.

Before going much further, an important cautionary reminder must be attached to all that has been said so far. These principles of Just-War are supposed to give life to a symphony of ethical conduct in warfare. If one of the propositions, specifically the motive of right intentions, is so heavily weighted that it becomes the only justification for war, then as Wells thoughtfully muses, “just war justifies Armageddon if our hearts be pure, and this is to justify too much” (Wells, p.828). To counteract such a reckless brand of jingoism, precision and careful calculations must be made to ensure that the violations of human rights that occur in war as a result of imperfect weapons and soldiers do not outweigh the human rights we seek to preserve (Luban, p.176).



### *Just-War Theory and the doctrine of Double Effect*

No discussion of Just-War Theory is complete without a reference to the doctrine of Double Effect, not only for the sake of scholarship, but also to set up the discussion in the next session, which will address the violence done to the innocent. Even though the Just-War Doctrine offered earlier in this section claims that just wars do not target innocent non-combatants, innocent non-combatants will surely die in the fog of war, regardless of advancements in technology. The important distinction here is that non-combatants are never targeted in a just war. Their deaths are the result of a morally justified action that did not have the innocents as an intended target, and this negative outcome is never to be interpreted as fulfilling some larger good. There are many critics of the principle of Double Effect, yet it still remains a forceful ethical guide when men and women in the trenches, strapped for time, must make heart-wrenching decisions (Blackburn, p. 109).

### *Just-War Theory and a Hierarchy of Rights*

The criticisms scribbled on earlier versions of this paper revolved around many issues, especially my rather brash assertion of human rights as rights worthy of a fight. Hopefully, the following elucidation of rights talk will make my reasoning for this assertion clear. This is not intended to be the end all discussion of the nature of rights, but I do believe it will tidy things up a bit.

The below “Hierarchy of Rights”<sup>3</sup> (Figure 2, next page) helps clarify why I agree with Luban that violations of socially basic rights, such as security rights and subsistence rights, qualified as the right intentions for initiating a Just-War, while other rights, such as the right to an abortion or to a paid leave of absence, would not be considered a right intention for a Just-War.

The reason I propose, along with Luban, that only socially basic rights or moral rights can be considered proper intentions for initiating a Just-War is that socially basic rights allow all the other rights of a society to flow forth in a cascading manner. For instance, if socially basic rights are not fought for and sustained, then something as simple as obtaining a fishing license becomes incredibly difficult. A free and open legal system is parasitic upon the acknowledgement of certain inalienable rights, such as the right to happiness or a free conscience. If the legal system cannot get up and running, then surely institutional rights won't be possible either. How would folks be able to assemble, create organizations, and run their organizations' internal matters?. And finally, a society that deprives its citizens of a right to life cannot be expected to have legitimate gaming rights.<sup>4</sup>

It should be noted that the hierarchy I've constructed here is by no means exhaustive or non-controversial. For example, my placement of the right to an abortion or the destruction of embryos in the 2<sup>nd</sup> tier could be troubling for many. However, my reasoning for doing so is as follows. If one were simply to put all rights on an even par, then the right to freedom of expression or the right to life seems about as important as the right to plant petunias in your flower bed. Such a relativism of rights trivializes what we know in our hearts

to be primary. If all rights are the same, then they essentially mean nothing. I could draw a new right out of thin air, such as the right to create a monkey-man (human/primate hybrid), and it would be on the same level as my right to self-defense. Does this comport with our fundamental understanding of rights?. No, it does not. The reason for this is not simply because we have certain intuitions about the primacy of particular rights, but rather the language of rights is working off a certain cultural anthropology, specifically that of the Judeo-Christian tradition. Without this metaphysical background all rights lose any motivating force. Why should we work so hard and sacrifice so many men and women to the ideals of freedom of conscience or happiness or free expression, if it is not somehow tied with our understanding of a benevolent supernatural caretaker who has inscribed certain freedoms in our very being?

It could be argued that resorting to God to justify entitlement rights is unnecessary, maybe even dangerous, and that we can say having socially basic moral rights are worth fighting for because they bring about a more desirable world. Perhaps this is true, but it seems to me that an understanding of what God's will is for his children provides the essential metaphysical and moral framework from which to elicit a fight for morally basic rights. It is quite possible that there are those who have such a love for humanity swelling in their hearts that they would let their own existence be compromised. Such souls should be lauded. However, it seems to me that unless we have a certain understanding of how God desires us to treat our brethren and the sort of world God envisions us to bring about, little motivation can be mustered amongst the peoples of the world to passionately

Figure 2: A Hierarchy of Rights

**MOST IMPORTANT RIGHTS**

*Socially Basic/Moral Rights*

- right to life
- right to self-defense
- right to happiness
- right to a free conscience
- right to worship freely
- etc. . .

**2ND MOST IMPORTANT RIGHTS**

*Legal Rights*

- right to a drivers license
- right to a building permit
- right to start a business
- right to an abortion or to the destruction of embryos
- right to vote
- etc

**3RD MOST IMPORTANT RIGHTS**

*Institutional Rights*

- right to vote in an organization
- right to the amenities of a club
- etc

**4TH MOST IMPORTANT RIGHTS**

*Gaming Rights*

- right to a fair referee
- right to a clean fight/game
- etc

and sometimes violently fight to bring about a better state of affairs. Without a theistic mandate for justice, the fight may seem too much of an inconvenience and many would probably conclude that the abysmal state of affairs would work themselves out eventually anyway. There is no way I would ever fight, let alone debate, for a socially basic right unless there was a metaphysic underpinning it (Elshtain, p.62).

Thus far I have not comprehensively spelled out who or what may be in possession of rights, so to this we now turn. Let us begin with the easiest scenario. Animals do not possess rights. Why? If animals legitimately possessed rights as a matter of their being, then it would not be absurd to say that the cat violates the rights of the mouse, the wolf violates the rights of the cat, the lion violates the rights of the wolf, and so on. Is this absurd? Surely it is; however, it should be noted that simply because animals lack rights, that does not give us *carte blanche* to do with them as we please. We may have duties to be humane towards animals, even if the animals do not have the corresponding moral right to be treated humanely. Now on to the more pertinent question of whether an embryo can possess rights. The reason often given for denying embryos rights is that they somehow do not possess the cognitive capacities of full humans. Embryos do not think, feel pain, or create masterworks of art, yet many humans—who most definitely have rights—cannot carry out these processes either. Infants, imbeciles, and chronic lunatics are thought to have rights despite their cognitive impairments or mental underdevelopment. All that is needed is a proxy to claim their rights on their behalf (McCloskey, p.123-125).

Our understanding of rights will always be grounded in our understanding of what it means to be human. I will take it as non-controversial that to be human is to be something more than an entity with certain cognitive abilities. When a loved one descends into senility, such as in the all too familiar cases of Alzheimer's, one does not immediately brand the sufferer as something other than a person and strip them of their rights. Similarly, though their cognitive abilities have not fully developed, infants are granted a right to life, and any violence done to them cannot be justifiably called murder. (Elshtain, p.62).

As will be shown in the next section, it is my experience that most sensible people, be they liberal, moderate, or conservative on embryonic stem cell research, have made this connection. The true question before us is not whether or not embryos have rights, but what kinds and to what degree. Norman Gillespie does not specify the degree of rights that an embryo has during each stage of development, largely because determining such a matter seems ethically and scientifically impossible. He just simply states that at the point of conception, the conceptus has a minimal right to life that grows over every stage of development. A fetus for Gillespie has more of a right to life than an embryo; however, it does not have the same right to life as its mother. This continuum of rights from conception to fetus may mirror the general sentiments of most Americans, but does it make sense when subjected to further scrutiny? (Gillespie, p.239)

There is something intuitive about this idea; however, one may legitimately ask when precisely the unborn fall off the continuum of nascent rights and into

the world of full rights. For it seems, on Gillespie's reasoning, that humans never fall off the rights continuum and that the person who is only moments older or smarter than me possesses socially basic rights to a greater degree. Not only that, but the oldest/wisest person alive has more rights than anyone else on the planet, and as soon as that aged individual dies, another elderly and wise person takes over the throne of rights and possesses them to the fullest extent. This cannot be. Or at least it cannot be if we are to continue on in our belief in the equality of people. It seems, then, that while this evolution of rights idea has some intuitive force, ultimately it must be rejected.

There will be those who will attempt to tear the hierarchy of rights asunder because they believe that all rights, including experimentation on embryos and abortion rights, can be reduced to the socially basic human rights enumerated in the upper echelon. For instance, one may demand that the right to an abortion or to destructive embryo treatments can be fitted neatly into the definition of the right to happiness. Having a baby or not having a treatment derived from killed embryos may make some claim that their right to happiness has been impeded. This is in a way true. Having a baby (though I believe a baby should not be categorized as an impediment) and being denied a treatment derived from embryonic stem cells will bring misery upon some and frustrate their right to happiness. I have total empathy for such people, but since we have reasonably established the fact that embryos have rights on some level, those rights must be protected against our own desires. These are scenarios where rights conflict. I believe Gillespie's argument for partial rights has been satisfactorily refuted; therefore, unearthing the claim that "I am only abridging the partial rights of a person in an incipient stage" will not do. Socially/Morally basic rights appear to be something we either have or we do not have from the first instance of conception until we shuffle off this mortal coil.

One further point of clarification should be made before entering the next session. Many conservatives may be uncomfortable with my acknowledgement of the right to an abortion or to destructive stem cell research as a second tier legal right. However, just because socially and morally basic rights provide the foundation for legal, institutional, and gaming rights does not mean that these different types of rights are always in congruence with the foundational rights. Though the Supreme Court exists because of a preservation of socially basic rights, this does not mean that those jurists derive every legal right from the morally basic. In sum, the rights to abortion and destructive embryonic research are legalistic rights that can be overturned because they lack a transcendent ontology; whereas socially basic rights stand the test of time due to their origination in the being of a human person.

## **The Application of Just-War Theory to Embryonic Stem Cell Research**

Now we must take what we have gathered from the first section and see how the enterprise of embryonic stem cell research fares. The questions I propose to answer range from the rather basic to the abstract. Once each has been addressed, we should have fairly strong reasons for rejecting or holding to the view of embryonic stem cell research as a legitimate application Just-War Theory. Let us begin by applying the Just-War Doctrine to the state of destructive embryonic research.

If a War on Disease were to be declared, the declaration must be issued by the duly constituted authority of our nation, specifically the congress and the White House. If this were to happen, then there is no violation of the Just-War Doctrine thus far. Next, we must ascertain that the damage done to the enemy in a War on Disease is proportional to the injury inflicted upon the virtuous. This is where the argument for a Just-War on disease begins to disintegrate. We must ask, "Can a war be declared on and fought against something abstract, such as disease?" There will be those who will point to the War on Terrorism or the War on Drugs as examples of wars fought against abstract entities; therefore, it should not be much of a reach to declare war on disease. However, this line of reasoning will not do because the War on Terror or the War on Drugs physically manifests itself in moral agents worthy of punishment, such as terrorists and drug lords, respectively. Disease can manifest itself in moral agents, but never do we think that the individual plagued with a particular disease actively chose such a disposition.

Furthermore, the physical instantiation, the person with the disease, is never targeted for punishment or elimination. In fact the opposite is true. Numerous resources are devoted to prolonging the lives of the diseased. In sum, it seems impossible to inflict damage, let alone proportional damage, on disease. This line of argumentation should also adequately address tenet three of the outlined Just-War Doctrine. Even if we have in mind the physical instantiations of disease as the enemy we are fighting, there is no time constraint on how it is combated. Many unfortunate souls are plagued their entire lives with diseases that are combated sometimes ineffectively or with treatments that take years to show that the disease has been beaten into submission. Moreover, the third tenet, if applied to disease, treats the disease itself as a moral agent, which it is definitively not. For us to hold an aggressor responsible, the aggressor must choose to aggress. Viruses and flawed genes, which we all possess, are biological mechanisms that are programmed to behave in certain ways. The only way that the third tenet could be made intelligible is if a legitimate argument could be made for the moral agency of quasi-alive viruses and pathogens. This seems very unlikely.

Tenet four of the Just-War doctrine states that there must be a real possibility of victory in the war fought against disease. Could embryonic stem cell research offer such a promise?. It can definitively not. Death is an unavoidable aspect of the human condition. Even if embryonic stem cell research made great

strides against diseases such as Parkinson's, Diabetes, and other diseases, new maladies would crop up. Modern history has shown that science has extended life, but not necessarily the quality of life. Fifty years ago, a farmer may have died in his late fifties of pneumonia, but today the farmer lives on only to succumb to another disease he was never, by nature, intended to suffer from. Specifically, I have in mind the epidemic of cancer that currently pillages the vitality of many good men and women. This is not an argument for medicinal apathy, rather an argument against the idea that disease can ever be conquered. With each round of innovative treatments and machinery, man prolongs his life, but brings upon himself ailments previously not considered.

My iconoclastic carpenter friend, Aaron Mattix, took issue with the point made about disease's insurmountable nature and the subsequent judgment of a War on Disease not passing tenet four of the Just-War Doctrine. His criticism originates from the concern that even Just-Wars never cease to bring about peace, for wars, just like diseases, continue to break out no matter how hard we attempt to secure peace. So either tenet four of the Just-War Doctrine should be thrown out or we should concede that no Just-War has ever been fought and will ever be fought, unless everyone on the earth suddenly becomes nice and convivial. I believe this objection would have more force if every Just-War were to be construed as a "War on War".<sup>5</sup> The fact of the matter is Just-Wars have a limited scope, which makes victory possible. A Just-War may aim to stop the ethnic cleansing occurring currently in Darfur; however, that war does not suddenly become unjust should ethnic cleansing break out on a remote island principality. Now contrast this with a War on Disease. The war on disease has death by natural causes as its ultimate end, which makes it quite improbable that the war could be won.

Tenet five postulates that War must be used as a last resort. Is the destruction of embryos in a War on Disease the last resort?. It seems to me that it is not, especially since there are other avenues for treating a particular disease that don't involve the destruction of embryos. Parkinson's, for instance, can be treated with an adult's own stem cells. So can debilitating spinal cord injuries. There are also a variety of drugs in development that may one day provide the silver bullet to take down whatever disease is in question. It appears that embryonic stem research could never be championed as a measure of last resort until it has been conclusively shown that all other treatments bear no promise of treating whatever disease we may have in mind.

Addressing tenet six is by no means an easy task, for it requires us to find consensus on the moral rights of embryos and when, if ever, embryonic rights can be abridged for the sake of a single person's welfare or for the welfare of the public at large. I would like to have 6(a) before us as we address this issue. Here it is again.

- (6) "the participants must have right intentions; and" (Wells, p.821), which include;
  - (a) "A just war is (i) a war in defense of socially basic human rights (subject to proportionality); or (ii) a war of self-defense against an unjust war." (Luban, p.175).

These are the questions we must resolve or at least attempt to answer: (1) *Is health a socially basic right?* and (2) *Can the rights of the embryo be abridged in pursuit of this socially basic right when a war has been declared on disease?* Let's begin with the first question. I believe that a proponent of a Just-War on disease could legitimately claim that health is a socially basic right, or perhaps refer to it as the ultimate right of self-defense. Such an exponent could claim that defense against disease is just as important as a defense against totalitarianism or terrorism. In the latter efforts, we are attempting to kill people before they kill us. In a war on disease, we would be trying to save the lives of those struck down with something terrible. In response to the second question, I believe we cannot abridge the rights of these embryos in a "wartime" scenario, because I believe it has been reasonably demonstrated that they fully possess socially basic human rights. Killing the embryos for research would be akin to bombing an orphanage to demoralize the enemy and facilitate a peace agreement. Doing so would also violate the 7<sup>th</sup> tenet of the itemized Just-War Doctrine, for we would be purposely targeting innocent non-combatants.

## Conclusion

In the last section, I argued that a Just-War could not be declared on disease and that embryos could not be sacrificed towards this cause for the following reasons: (1) Disease is an abstraction that cannot have damage inflicted upon it in a proportional manner, unlike a War on Terrorism, where physical instantiations of terror (terrorists) can be treated in proportion with the hostility they have dealt out; (2) Similarly, a real and immediate threat cannot be posed against the enemy, largely because combating a disease takes years and the disease does not really 'suffer' from protracted treatment—this conclusion was largely founded upon how it is impossible to combat something abstract; (3) The War on Disease was also denied Just-War status, for it is unlikely that we could ever win a war against pestilence as it always returns in a more dramatic and invidious form, regardless of revolutionary breakthroughs in science; (4) Destroying embryos in the name of fighting disease is not a last resort when other options exist in the fight that are either under-funded or overlooked for whatever reasons, be they political or not; and, (5) most reasonable people would agree that human embryos have *some* sort of human status and killing them intentionally in a war on disease would be analogous to targeting innocent non-combatants; therefore, this is an infraction of the final tenet in the sketched Just-War Doctrine. It appears that political and social conservatives may retain the commensurability of fighting Just-Wars and protecting the lives of the unborn, without worrying about the possibility of someone calling for a Just-War on Disease.<sup>6,7</sup> E&M

## Endnotes

- 1 The practice of freezing embryos for the sake of fertility treatments should be immediately banned, for it indirectly fuels the enterprise of destructive embryonic stem cell research; however, that is a topic worthy of another explorative paper.
- 2 Each of the axioms laid down by McKenna can be chopped apart by skillful analytic philosophers who refuse to morally tarnish themselves with an endorsement of any sort of war, be it just or unjust;

- however, it is not the goal of this modest article to split hairs with such wholly committed pacifists. This paper is oriented towards an audience who recognizes the horrid necessity of war in a non-ideal world. Perhaps, Flescher put it best, when commenting on Levinas' views, by writing, "It is love...that justifies coercion through violence but only if the one who uses violence remains as impressed by its foreseeably ugly consequences as he is persuaded by its necessity" (Flescher, p.66) (Gale, p.521).
- 3 This scheme was assembled after reviewing H.J. McCloskey's "Rights," pp. 115-121; however, I am unsure if he would accept the hierarchy I've derived from his thinking.
  - 4 The way Saddam's son allegedly tortured soccer players for a poor performance immediately comes to mind.
  - 5 An issue taken up quite poetically in a Wilco song of the same name.
  - 6 Colleagues of mine and fellow thinkers did not hold out much promise for this intellectual undertaking. They discounted the very idea for three reasons (1) that liberals and moderates do not read up much on Just-War Theory, ensuring that the issue would never be proposed—only someone concerned about human rights from a religious perspective would even dream up the project; (2) The answer to the proposed question was obvious and could be settled without much cogitation; and, (3) that liberals and moderates have a very low estimation of human beings, so they would never think of embryonic stem cell research as controversial and subject to the ethics of Just-War. In regards, to points (1) and (3) my intuitions tell me that such criticisms exemplify a destructive stereotype in the minds of conservatives ideologically estranged from those across the political aisle. The truth is there are many intelligent and passionate moderates and liberals who are making this argument. The argument is just one that has not caught on in a culture saturated with thirty second sound bites, vilification, and slanderous slogans. On point (2), my own investigations of and interviews with conservative luminaries left me dumbfounded. Plenty could muster the arrogance to put down such a question; however they appeared speechless when reasons were demanded. That is why I felt this was a very necessary project.
  - 7 I am in debt to Catherine Hawley, Aaron Mattix, Jonathan Teubner, Jeff Markowitz, Drema McCoy, Aaron Mcleod, Natalie Stillwell, and Lorraine Krall for their thoughtful critiques of earlier drafts. Their help proved to be a tremendous asset.

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REPORT ON THE 13TH ANNUAL CONFERENCE ON BIOETHICS

## NEUROETHICS: THE NEW FRONTIER

July 13-15, 2006

Campus of Trinity International University, Deerfield, Illinois

ANDREW FERGUSON, MB, MRCGP

### **Nothing is for sure**

“Nothing is for sure”, said Raul Alvarez at the end of an interview on the opening night of the Center for Bioethics and Human Dignity conference on neuroethics. He had been telling 240 participants from all across the US and half a dozen countries overseas about his younger brother, Mario, who has been severely disabled neurologically since traumatic brain injuries after being the pedestrian victim of a hit-and-run incident in the year 2000.

The story of his medical care, of the ethical issues faced, of the health provider who continues to sue the family about bills which should be met by government sources, of the attorney who has provided free help there, and of the extraordinary commitment of the family who are with Mario 24/7, brought tears to some eyes. Invited to share one final message, Raul reminded us all of the ever-present uncertainties in clinical practice—sometimes about diagnosis but always about prognosis. The family wanted to stress to professionals the importance of hope and had certainly lived and worked by that principle themselves.

That extended interview followed a warm welcome by Dr Greg Waybright, the President of Trinity International University in Deerfield, Illinois—on whose campus the conference was held as usual—and an introduction to the scope of the new concept by Dr William Cheshire, who heads CBHD’s neuroethics working group.

In the second session that night, theologian Scott Rae answered the question “How much brain do I need to be human?” by confirming that while we are alive, we are all human beings. He went on to make the point, though, that in some clinical situations it does not necessarily follow that we need to be kept alive at all costs. Questions of tube feeding in the permanently unaware were later addressed in another plenary, and in a parallel paper presentation.

### **Boosting brainpower**

On Friday morning, Bill Cheshire began to contrast therapies and enhancement in an entertaining and highly visual session on “Boosting your brain power”.<sup>1</sup> Few will forget his four categories of boost: the “fizzle” (various proprietary products claimed without objective evidence to improve cognition); the

“perk” (a fascinating discussion of coffee and tea and their history); the “jolt” (milder categories of prescription only medication); and the “shock” (stronger categories still). He ended by contrasting the means and ends of chemical self-enhancement (where we can never be sure what we are doing—nothing is for sure) with the goal of growing spiritually as a disciple of Christ.

This paper was followed by another from psychiatrist and palliative care specialist Dr Jarry Richardson, who further explored the widespread use, on and off prescription, of Prozac and Ritalin. He shared some personal experiences, which helped a number present.

### **Downtime and movies**

More downtime was planned for this year’s conference, but topic-specific networking groups and parallel paper presentations were options around lunchtime and early afternoon. At any one time, there was a choice of six papers on offer, and a wide range of subjects was considered in popular meetings.<sup>2</sup>

In “Hollywood Bioethics” a panel with interestingly complementary perspectives considered clips from three recent mainstream movies with neuroethics themes. *Eternal Sunshine of the Spotless Mind* was the lead offering. A very convincing medical clinic in the not too distant future offers the erasure of painful memories, and a couple who split up and separately go through this process to wipe out all recall of each other are followed. The director’s style made this difficult to follow but rewarding, and the entire movie was later screened to an audience of 60 as optional Friday evening entertainment.

*Fifty First Dates* used comedy, sometimes crassly, to explore issues around short-term memory loss after head injury. One of the panelists described it as a “great chick flick” she would certainly use in her bioethics film discussion group. After a short introduction, a brief clip from *Final Cut* reviewed the use of neurotechnology to rewrite personal history and produce a sanitized movie that could replace a funeral service. Unlike its attitude to other debates within bioethics, Hollywood appears to be on our side concerning dignity issues in neuroethics.

### **Changing times**

On the third day, nurse and researcher Cindy Province considered “Coma: Anyone Home?”, and again, “nothing is for sure” would be one way of summarizing the many mistakes we make in diagnosis and prognosis. Estate planning attorney Jason Havens, who came to us from Christian Legal Society, one of five co-sponsors of the conference, gave helpful practical legal advice about capacity issues for clinicians and caregivers. This advice could be summed up as: Talk it over in advance and appoint someone to speak (if ever necessary) for you.

After more topic groups and parallel paper options, the conference closed with an inspiring double act entitled “Changing Times”. First, son Tom Pellegrino, a neurologist in Virginia, reviewed four common neurological

diseases and the advances that have recently been made in treating them. He introduced the ethical implications of some of these advances, before handing over to his father, the very well known Ed Pellegrino. Among his many appointments, Dr Pellegrino is a Senior Fellow of CBHD, but of course he is now known globally as the Chairman of the US President's Council on Bioethics. Centering his talk on conscience, he reviewed the changes in ethics in his own lifetime, as "medical ethics" gave way to "bioethics". There was wit and wisdom in a carefully considered presentation, which rightly ended with a standing ovation for a man who epitomizes the acknowledgement of the central place of human dignity in bioethics.

While "nothing is for sure" is almost always true in medicine and health care, the many Christians present, from many different backgrounds, had their confidence in eternal truth and the hope it gives strengthened during a fascinating three days.<sup>2</sup>

### **And finally**

Around 40% of the conference participants were there for the first time, and many commented that the average age has become younger. There are exciting plans to stimulate and network a growing number of special project groups, to stay ahead of the curve on bioethics issues, and to communicate the human dignity message further. The staff at CBHD is poised to build on CBHD's assets and implement even more effectively its mission to "educate, equip, and engage". E&M

### **Endnotes**

- 1 See Cheshire's related article, "The Matter of the Brightened Grey," following.
- 2 Audio CDs of all the plenary sessions and of all the parallel paper presentations are available at [www.CBHD.org](http://www.CBHD.org).

Presented by:  
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On the Deerfield, Illinois (Chicago Area) campus of Trinity International University



# Bioethics Nexus

*The Future of Science, Healthcare, and Humanity*

The 14th Annual Conference on Bioethics  
July 13-16, 2007



GREY MATTERS: NEUROETHICS

## THE MATTER OF THE BRIGHTENED GREY

WILLIAM P. CHESHIRE, JR., MD

Eric Kandel, pioneer investigator of the molecular mechanisms of memory, once commented, “We are who we are in good measure because of what we have learned and what we remember.”<sup>1</sup> If grey matter forms the warp and woof of personal biography, individuality, rationality and creative capacity, does it then follow that whatever we can do to augment cognitive function would make us better persons?

The gradual decline of memory during normal aging and the devastating effects of dementias such as Alzheimer’s disease<sup>2</sup> are highlighting the pressing need for research into the pathological basis of cognitive disorders<sup>3</sup> and the development of drugs to preserve and improve memory function.<sup>4</sup> The question of whether such drugs, as they become available, should also be used for purposes of enhancing cognition in healthy people has risen to the forefront of neuroethical discussion.<sup>5,6</sup> While developing therapies to improve cognitive capacity in patients with amnesia or dementia is indisputably a worthy goal, it is less clear whether society or individuals would benefit from a new pharmaceutical orientation promising enhanced mental performance for the healthy.

Part of what we learn we encounter in fiction. Readers of Sir Arthur Conan Doyle’s short stories will remember the famous detective whose name is synonymous with perspicacity. “I am a brain, Watson,” declared Sherlock Holmes.<sup>7</sup> Fewer, perhaps, will recall that Holmes occasionally turned to cocaine, which he found “stimulating and clarifying to the mind.”<sup>8</sup> In Sir Arthur’s era, cocaine had not yet been classified as an illicit substance, for the seriousness of its addictive potential was not yet widely appreciated. It had, in fact, attracted considerable medical interest as a tonic in the treatment of various ailments.<sup>9</sup>

Surveys and sales figures suggest that increasing numbers of students and professionals today are using nonaddictive stimulant medications beyond their defined therapeutic indications for the purpose of enhancing mental performance.<sup>5</sup> In coming years, pharmaceutical advances may offer even more potent “nootropics,” or drugs designed to boost brain power. As available drugs increase in potency, their ethical implications intensify. Enhancing the cerebral grey matter inevitably leads to ethical grey matters. The following terminology is proposed as a way of classifying nootropics into four categories of potency, each of which carries particular ethical implications.

In the *fizzle* category are various proprietary substances and over-the-counter supplements claimed to enhance cognition yet without definitive objective evidence. Examples include ginkgo biloba<sup>10</sup> and piracetam,<sup>11</sup> which have been shown to have at most an equivocal effect on cognitive function. The relevant ethical questions for fizzle drugs concern truthfulness in advertising and the need for regulations to deter exploitation of vulnerable patients. A guiding principle is *caveat emptor*.

In the *perk* category are mild dietary stimulants such as caffeine. If imbibed in moderation, coffee and tea are for most people safe, pleasant, and beneficial. If taken in excess, caffeine can cause insomnia, anxiety, palpitations, and headaches. Caffeine has a fascinating history across many cultures. European coffee houses, for example, replaced the earlier tradition of ale houses and became centers of scientific, literary, philosophical, and political discussion in which people from diverse social classes participated. The elegant custom of afternoon tea traces to ancient China.

In the *jolt* category are prescription drugs exerting a moderate stimulant effect. Examples include methylphenidate, modafinil, and amphetamine. Each has its medical indications substantiated by research and approved by the Food and Drug Administration. Occasionally prescriptions may be written for less clear medical indications, or partakers may obtain supplies of drugs through offshore pharmacies advertising on the Internet or through diverted prescriptions. Medical evaluation of stimulants focuses on issues of safety, as no drug is without potential side effects and health hazards.

In the *shock* category are stronger stimulants still. An example would be intravenous cocaine, the legitimate use of which is restricted by law because of its destructive social and chronic cognitive effects. Cocaine is also a local anesthetic, and just as research has provided more selective local anesthetics for use in medical procedures, future research may yield targeted cognitive stimulants highly selective for specific brain functions. Would the creation of designer drugs that could deliver cognitive stimulation within reasonable margins of cost and safety satisfy remaining ethical concerns?

Aside from important questions of practical safety, the *jolt* and *shock* categories raise more profound ethical questions. It is necessary to consider what is meant by the goal of better brain performance, by what means it would be sought, and why it might be desired.

The brain circuits that medication can artificially stimulate encompass only a narrow segment of the many facets of intelligence. Might drugs that rouse one aspect of thought also diminish or suppress other aspects of thought and feeling that we would value as integral to being human? Might drugs that preserve good memories also reinforce distressing memories or enhance the awareness and reminiscence of pain?

Further ethical concerns are more subtle, yet have the potential to transform society. Reliance on drugs to augment mental performance could undermine the virtues of discipline, study, personal effort, and commitment.<sup>12</sup> The tainted history of steroids and other drugs to enhance physical performance in athletes

is instructive in regard to the importance of principles of fairness in all forms of human competition. At the heart of the enhancement choice is the question of whether the guiding aspiration is the flourishing of human communities or a quest for individual perfection.

What would it mean for society if unequal use or access to such drugs were to divide people into the “enhanced” and the “unenhanced”? If one’s academic or business competitors were to attain a performance advantage through pharmacology, or if stimulant drugs were shown to improve measurable categories of learning or to reduce mistakes in the workplace, would we be truly free to choose not to “enhance” our brains? How far should mental enhancement be pushed?

In an age that esteems computational power, there is a temptation to reduce human thought to instrumental value. The brain is, however, not simply an engine; it is an enigma. Paradigms of the brain that emphasize cognitive performance, although in some ways practically useful, cannot supply an understanding of the purpose of the human mind or the dignity of the person.

Sherlock Holmes chose wisely—not in his use of cocaine—but in his preference to engage the more exhilarating challenges of the real world. “My mind,” said Holmes, “rebels at stagnation. Give me problems, give me work, give me the most abstruse cryptogram, or the most intricate analysis, and I am in my own proper atmosphere. I can dispense then with artificial stimulants. But I abhor the dull routine of existence. I crave for mental exaltation.”<sup>13</sup> The astute reader will observe that Holmes resorted to cocaine, not to enhance his mental acumen as a detective, but to escape the dreariness of the ordinary moments in life. Despite its potent stimulant effect, cocaine ultimately proved unsatisfying.

Although pharmacologic progress in cognitive neuroscience may map the brain, harness the flow of neurotransmitters, and measure success by boosting mental performance, additional resources are needed to discern the value of human thought and the purposes to which it is best applied. True wisdom recognizes that human problems are not primarily due to cognitive finitude but to flawed and fallen minds. Enhancing cognitive power would magnify both human accomplishment and human error. No amount of restructuring nootropics at the molecular level can separate this double-edged effect of biotechnology. Our greatest needs ultimately can be met not by stronger stimulants but by the redeeming grace of the Savior. **E&M**

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THEMED ARTICLE: NEUROETHICS

## BRAINS, ETHICS, AND ELECTIVE SURGERIES: EMERGING ETHICS CONSULTATION

PAUL J. FORD, PHD AND JOSEPH P. DEMARCO, PHD

### Abstract

*Increasingly health care teams seek clinical ethics advice related to patients being considered for elective neurosurgeries. Traditional clinical ethics consultations have focused on end-of-life decisions and/or hospitalized patients regarding decisions with considerable time sensitivity. Ethical deliberations about elective surgical procedures do not fit well into reactive clinical ethics consultation practices commonly employed for acute clinical ethics. The ethics consultant should be cognizant of the differences between these consultations and more traditional clinical ethics consultations. Performed carefully and reflectively, ethics consultations related to elective neurosurgeries can assist physician teams and patients navigate the particularly complex decision-making regarding neurosurgeries. We explore important similarities and differences between the two types of consultations and suggest how ethics consultants can be effective in the sphere of ethics consultation for elective neurosurgeries.*

**Key Words:** Ethics Consultation, Surgery, Informed Consent, Neuroethics

**Running Title:** Elective Neurosurgery Ethics Consults

### Introduction

Leaps in knowledge within the neurosciences have translated to increasingly complex neurosurgical choices. Brain imaging technologies have improved in resolution and type. We can now better visualize abnormal formations as well as correlate functions with activations within the brain. On the interventional side, we are able to more precisely target sites within the brain for ablation or electrical stimulation. Rather than diminishing the difficulties in care, these new abilities and knowledge provide an increasing number of reasonable options that have differing types of benefits and harms. (Ford and Henderson 2005) Although, elective neurosurgery (ENS) interventions intend to improve quality of life, they also force patients and health care teams to make treatment decisions that balance categorically different benefits and harms. This generally occurs in the absence of an overriding concern for risk of immediate loss of life or function through inaction. A clinical ethics consultant may be helpful to both the patient and the medical team in complex cases regarding whether an ENS intervention should be offered/consented to. The ethics consultant should be cognizant of the differences between these consultations and more traditional clinical ethics consultations. This includes clearly understanding the limits of the ethics consultant's role.

Although traditional clinical ethics consultations have focused on end-of-life decisions and/or hospitalized patients, increasingly health care teams seek clinical ethics advice for patients being considered for ENS. (Ford and Kubu, 2006) These consultations have in common many of the features found in acute/emergent clinical ethics consultation. Yet, these consultations also vary somewhat from these common types of ethics work. We will briefly review the character of ethics consultation, elucidate unique aspects of clinical ethics consultation for ENS, provide a brief sample case, and conclude with suggestions for the use of ethics consultations for ENS.

### **Acute/Emergent Ethics Consultation**

The most common type of ethics consultation, acute/emergent clinical ethics consultation,<sup>1</sup> pertains to critically or terminally ill patients in a hospital setting.<sup>2</sup> Clinical ethics consultants perform these with significant decision-making urgency because of the time sensitive nature of the particular situations. The reactive clinical ethics consultation model usually engages in “emergent” ethics consultations because of the limited time frame involved in decision-making. This includes acute illnesses as well as actual emergency medical care. Although clinical ethics consultations are almost always “elective” in the sense of not being required by law or custom, they are “acute” in the sense that they address medical emergencies or high acuity circumstances for which a time sensitive decision must be made. For the sake of this article, we use “elective” to refer to the type of medical decisions being made with particular emphasis on timeframe and the “electiveness” of the medical intervention.

In the acute setting, ethics consultations commonly occur when significant conflict already exists between various parties. The role of the consultant tends to be as a mediator, facilitator, or arbitrator in conflict resolution scenarios. (Dubler and Liebman 2004; Orr 2001) Balancing values in ethical decisions must be done in the context of very immediate pressures placed on all participants in the healthcare endeavor.<sup>3</sup> Important skills in acute clinical ethics consultation include careful listening, articulating values, and providing evaluation of value consistency in decision-making. These consultations usually occur within an inpatient hospital setting, which raises many significant concerns about coercion and power differentials in the physical interdependence of having been admitted to an institution.

### **Elective Neurosurgery (ENS) Ethics Consultations**

Many contemporary neurosurgeries involve elective procedures intended to improve quality of life by, for example, relieving involuntary limb movements, alleviating pain, or reducing seizure frequency.<sup>4</sup> Providing these therapies may allow patients to better participate in their activities of daily life (ADL) or simply to live with less suffering. These patients may be able to feed themselves, walk in an unaided way, gain privacy, or allow painless physical interactions with others as a result of a successful ENS. While gains in function may be significant, and often highly valued by the patient, these procedures are not characterized as life

saving. Even though ENS are not undertaken to save lives, the procedures still involve serious risks. In some cases, potential harms of these procedures may include paralysis, change in cognition/personality, or death. There has been considerable discussion of the use of multidisciplinary medical care teams, often including a bioethicist, to appropriately sort through these challenging choices. (National Commission 1977; Greenberg 2004) An individual ethics consultant can play an important role even beyond participation in these multidisciplinary groups. ENS ethics consultations must address both the complexities of a quality of life surgery that entail significant risks as well as the fact that ENS procedures are often innovative and may involve significant uncertainty.

In ENS ethics consultations, it is more likely that a physician or medical team will request these consultations because of a moral distress of the physician, within the medical team or within the patients themselves rather than as a result of an open conflict as found in many acute ethics consultations. Further, the power imbalances and coercion found in acute consultation are decreased since the ENS ethics consultations usually occur with patients as outpatient visits.<sup>5</sup> In conjunction with the fact that patients can leave the medical environment in order to consider their decisions after a consultation, ENS ethics consults may provide an environment more conducive to competent decision-making than the inpatient setting. In particular, this organization may limit the potential for coercion. However, patients eligible for ENS often have chronic problems that may lead them to request desperate measures if they are left with no standard/non-invasive therapies. This may hinder their ability to appropriately balance risky options. For instance, a patient with intractable pain may be coerced into a dangerous innovative treatment if great care is not taken. On the other hand, that same patient should not be kept from a potentially beneficial treatment if this becomes the most reasonable option. This type of case may be where a clinical ethics consultant can provide an important non-medical perspective to help counterbalance potential undue influences.

Although the goals of ENS consults may be similar to other types of consults, the role of the consultant may have subtle differences. Less often, the consultant is in the role of mediator, but still at times is asked to be an adjudicator during the articulation of professional obligations and patient values. The consultant can be an evaluator (from a layman's view) of a patient's capacity to make a particular decision. This includes evaluating the consistency of decision-making. Although psychiatrist, psychologist, or attending may have final judgment or administer objective testing to demonstrate decision making capacity, such as the MMSE or DRS, clinical ethicists provide at least a separate view point. Further, the ethics consultant may be asked to help patients, families and health care providers understand how values comport with the facts of the circumstance. Finally, the consultant may advise medical/surgical teams concerning whether it would be ethically permissible to go forward with a procedure given the varieties of uncertainties and articulated values.

As can be seen in our discussion, clinical ethics consultations for quality of life ENS present elements of acute consultation. The differences and similarities can be used to develop best practices for clinical bioethicists engaged in these types of elective consultations. Since surgical procedures are by definition

more physically invasive and involve a somewhat transitory patient/surgeon relationship, they have special ethical challenges that do not focus on the processes involved in acute ethics consultation. Elective surgical procedures for patients with chronic illnesses become particularly challenging when there are significant questions about risk/benefit justification or when a patient may not have the ability to properly evaluate, or understand, significant mortality/morbidity risks. For ENS ethics consults, the consultant frequently has fewer inherent time constraints for decision-making. This provides the opportunity to more robustly research and discuss the reasonable options and implications of any particular therapy choice. Often the ethics consultant is asked to both assist health care teams in evaluating a patient's decision making and in assisting patients in balancing tradeoffs between valued functions that could be lost or improved. Team members may disagree about expected gains and risks, and patients, often adolescents, fail to understand uncertainties and risks.

### **Case Example**

At the request of the medical/surgical team, I met with a patient who demanded an ENS procedure that potentially could be life enhancing. The specific procedure involved the placement of a neurostimulator that was part of an emerging, although FDA approved, technology. Since the patient met the minimum medical eligibility criteria for the surgery but also had a mild cognitive deficit, the medical/surgical team asked that an ethics consultant provide input about the patient's capacity to give informed consent and whether the surgery would be ethically justifiable given its cost/benefit ratio. Although the surgeon believed that there was a reasonable chance of improving the patient's physiological condition, he believed it was unlikely that the physiological improvement would provide a functional benefit, i.e. the patient would not be able care for himself any better because of the improvement. Further, the surgical risks included further functional deficits unrelated to the patient's current disability. When I spoke with the patient and his family, I asked what made the patient's life worth living. His response was that he enjoyed reminiscing, talking with friends, and walking in the neighborhood. Without these, the patient believed his life would be relatively joyless. After further conversation, it became clear that the patient did not wish to risk losing any one of these activities. However, the actual surgical risks included the possibility of losing some speech, causing memory difficulties, or making walking more difficult. Through the discussion, the patient came to realize that the surgery should not be performed because it was inconsistent with the things he most valued.

In this case, my role as an ethics consultant was both as an evaluator of the justification for surgery as well as the consistency of decision making in relation to the patient's values. Although this could have been done by one of the physicians on the care team, the ethics consultant's primary focus and skills center on unraveling and uncovering these types of values. I advised the medical team that even if the patient reasserted a desire for surgery, it would be ethically questionable to proceed. This was accompanied by a clear articulation of the need for the patient's request to be in concert with the patient's own articulated values.<sup>6</sup>

## Case Discussion

Admittedly, the resolution to this case was much clearer and simpler than many elective pre-surgery ethics consultations. In this case, the patient and family had an epiphany and decided that it would be absurd to demand the surgery, given the patient and family's values. However, if this epiphany had not occurred, the ethics consultant still would have been faced with articulating the ethical boundaries to both the patient and the health care team. This articulation would include giving a judgement and recommendation based on the context of the case. This was particularly complex given that this brain surgery asked the patient, family, and team to weigh a motor function against a cognitive risk.

In the current case, even if the patient had wanted to go forward with surgery it was the ethicist's obligation to recommend against proceeding. Based on the patient and family's articulation of the patient's values, the surgery would not have been justified. The potential physical improvement could not justify the cognitive risks. This does not suggest the ethicist should have been the arbiter of medical practice, given that benefit is defined by patient goals and values. The surgeon judging that the patient could be significantly harmed without a correspondingly significant chance of improving the patient's quality of life clarified proper course of action. The harm done by surgery could have been exactly what the patient believed to be most fundamental to a good life. As the ethicist, I was not primarily a patient advocate or patient surrogate, *per se*, but was interested in good ethical practice. The job as consultant was to articulate this to all parties in a clear manner that included good documentation.

Although no single course can be dictated by ethicsconsultants, they can give recommendations and guidance informed by, and entailed from, the values of all involved stakeholders. When there is genuine uncertainty, the role involves helping to demarcate the limits of appropriate practice. The consultant must carefully consider whether it is justifiable to go forward with surgery given ambiguities and uncertainties.<sup>7</sup> When lack of consensus about surgical candidacy exists among the medical team, the consultant at times may help in evaluating the degree to which a shift of decision-making responsibility to the patient or surrogate is appropriate.

The surgeons in ENS teams often do not have the luxury of a long-term patient/physician relationship. Patients come to a center for a particular intervention and then are followed by their primary care provider or a medical specialist. The evaluation of whether a surgery is justified depends upon the surgeon's interactions with the patient, the reports from other physicians, and discussions with subspecialties. In this way, even elective surgery has significant constraints in that the surgical team has a limited number of interactions on which to base its evaluation and judgment. The uncertainties of brain surgery in itself as well as the high value placed on cognition make these decisions uniquely challenging. Given the lack of a long-term relationship in most cases, the clinical bioethicist may provide a crucial source of information and guidance.

## Conclusion

Our discussion of ethics consultation for ENS procedures such as epilepsy resections, deep brain stimulator placement, radiosurgery, and rhizotomy, help to elucidate particular characteristics of elective surgical ethics consultations and promote discussion of the special challenges involved in balancing uncertain consequences and difficult decision-making on the part of patients and the medical team. ENS ethics consultations are not the only type of pre-surgery clinical ethics consultations that have been undertaken by ethicists. Many of the above distinctions could be equally applied to consultations related to the donation of solid organ transplantation, artificial reproductive therapies, and purely elective aesthetic surgeries. These types of consultations also contain significant differences to acute consultations. However, neurosurgery cases pose particularly complex decisions given the centrality of the brain in our understanding of ourselves and the lack of specific knowledge about the connection between particular brain structures and function.

Ethics consultations for ENS can assist physician teams and patients navigate these complex decisions related to brain surgeries. The function, role, and utility of a clinical ethics consultant hinge on several elements particular to, or at least intensified by, the obvious centrality of the brain. These elements include innovation/newness of a procedure, uncertainty about the boundaries of surgery candidacy, and genuine discordance of balancing values between parties. Each of these comes in degrees, but when any are significantly present, it indicates that an ethics consultant could be helpful. In general, individual physicians and patient management committees themselves have the necessary ethical tools to address ENS cases as part of standard therapy in uncomplicated patients. There need not be a regular involvement of a clinical ethicist with patients when robust informed consent can be attained, there are no significant conflicting interests, and patient harms/benefits are balanced. When there are significant uncertainties that cannot be resolved empirically, a healthcare team and/or patient could benefit from a clinical ethics consultation. A clinical ethicist may be of particular help when gains and losses of mental states (cognition or mood) must be weighed against gains or losses of physical elements (motor or pain). The skills of careful listening, articulating values, and providing evaluation of value consistency translate well from acute clinical ethics consultation. The skills developed by clinical bioethicists can be usefully applied to support physicians and patients in coming to ethically appropriate decisions. Greater emphasis should be placed on making clinical ethics consultants available for neurosurgical teams in the evaluation of challenging decisions about elective surgeries. Surgical teams should be educated on the ways in which bioethics can be of assistance. Clinical ethicists should be educated on these consultations and on paying particular attention to the differences to, as well as similarities of, other types of ethics consultations. E&M

## Endnotes

- 1 We adopt this language of acute clinical ethics consultation from the article by Gill, McPhee, and Kerridge, who described the Australian experience of clinical ethics consultation. (Gill, McPhee, and Kerridge 2004)
- 2 It is interesting to note that the major studies of efficacy of ethics consultations appear in end of life decisions in the critical care setting. (e.g. Schneiderman et. al. 2003)
- 3 The idea of using balancing of values in ethical deliberation is important. (DeMarco and Ford, 2006)
- 4 In particular these particular functions may be addressed through deep brain stimulation, rhizotomy, and hemispherectomy, respectively.
- 5 Of course of the ENS still occur while a patient is hospitalized for treatment of an exacerbation of the chronic illness or for co-morbidities. An example of this type of case may be found in a case write-up by Dudzinski. (Dudzinski 2005)
- 6 This example is based loosely on one of the author's (PF) cases. Details have been altered.
- 7 The theme of uncertainty exists in much of medicine. (Katz 1984)

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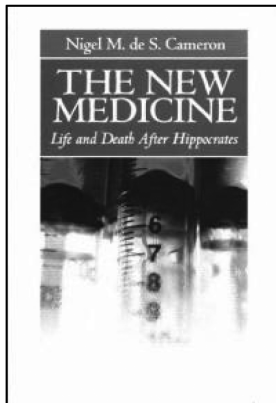
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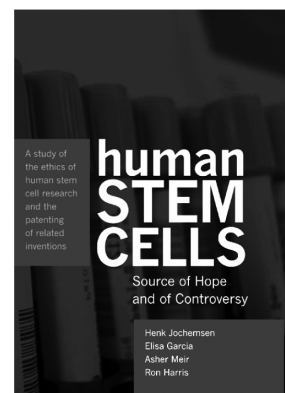
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THEMED ARTICLE: NEUROETHICS

## NEUROETHICS AND THE PERSON: SHOULD NEUROLOGICAL AND COGNITIVE CRITERIA BE USED TO DEFINE HUMAN VALUE?

DERRICK L. HASSERT, PHD

### Abstract

*Within neuroethics, functionalism attempts to define personhood by equating the concept with a set of functional, neurological and/or cognitive criteria. While this approach is often fueled by a desire to identify those traits that are distinctly human, by necessity it often removes the label of “person” from human beings at early stages of development, the developmentally disabled or those who have suffered neurological insults. This approach is contradictory to the older notion of affirming the person as a living member of the human species. Within Aristotelian and Thomist approaches to personhood, the human central nervous system can be addressed within the context of the potentialities of the human being, not as a system that needs to reach a stage (or actualization) of development in order to make an organism distinctly human. Functionalist approaches to human cognition, behavior, and neuropsychology are less ethically problematic if they affirm the existence of human nature and its value prior to examining function.*

*Keywords:* Neuroethics, Thomist, Aristotelian, Cognitive, Soul, Personhood, Human Nature

### Introduction: When Did You Become a Person?

The question posed above is fraught with ethical, moral, philosophical, and religious implications. How we answer this question, and the foundations upon which that answer is based, will guide our decision making in numerous areas. When scientists and ethicists even speak in this manner—“When did you become a person?”—there is an underlying premise that there could have been a time during which you, as a distinct biological entity, were in existence while your status as a “person” was in substantial doubt. Author and neuroscientist Steven Rose presents the logic behind this position:

Is a newborn baby already human? Yes, but not quite. In important ways she is not yet a person with independent agency, but a pre-human in the process of becoming a person. Like many other infant mammals, the infant human is born only half-hatched, altricial. Several years of post-natal development...are needed before a person, let alone a mature person, begins to emerge...<sup>1</sup>

In a piece condemning President Bush's banning of therapeutic cloning and limiting federal funding for embryonic stem-cell research, cognitive neuroscientist Michael Gazzaniga comments similarly:

The president's view is consistent with the reductive idea that there is *an equivalence between a bunch of molecules in a lab and a beautifully nurtured and loved human who has been shaped by a lifetime of experiences and discovery*. His view is a form of the "DNA is destiny" story. Yet all modern research reveals that DNA must undergo thousands if not millions of interactions at both the molecular and experiential level to grow and *develop a brain and become a person*. It is the journey that makes a human... .

What is at issue...is how we are to define "human life." Look around you. Look at your loved ones. Do you see a hunk of cells or do you see something else?

We all automatically confer a higher order to a developed biological entity like a human brain. We do not see cells, simple or complex — we see people, human life. *That thing in a petri dish is something else. It doesn't yet have the memories and loves and hopes that accumulate over the years.*<sup>2</sup>

In this analysis, in that human beings are not born as "complete" and mature human beings, they are not to be afforded the status of persons. Therefore, the organism develops into its status as a full-blown human being and full-blown person; such a status is not simply inherent in the existence of the organism as a member of the species *Homo sapien*. To accept this position we must also accept that a certain level of neurological and cognitive development must be reached in order to attain and merit being designated humans and persons. This is what is commonly described as a "functionalist" position, wherein an organism must possess certain functional capacities for worth or value to be ascribed to that organism. Rose and Gazzaniga take this position to a logical conclusion: You cannot be deemed a person, let alone a full human, unless you have reached some level of functional development as evidenced by advanced cognitive neuropsychological capacity. This manner of elucidating the concept of personhood is a relatively new development; dictionaries usually define a person simply as a "living human being" and it is this older concept that has historically shaped legal and ethical thought.<sup>3</sup> This essay is meant to address the functionalist stance on the question of personhood, the relationship of this stance to equivocating the concepts of mind and soul in theology and philosophy, and how these elements have influenced thinking on the relationship between neuropsychological functioning and human value.

### **The Brain: Organ of the Mind or the Organ of the Soul?**

Perhaps one of the most important points of distinction to be raised in any discussion of neuroethics from a philosophical or theological perspective is the distinction between the concept of "mind" and that of "soul," for they often relate to how we form a concept of personhood. Too often the two words

“mind” and “soul” are conflated or carelessly confused. In much of the more recent philosophical and theological literature that addresses the concept of the soul, it is often argued that the word itself is outdated and irrelevant and that concepts such as mind or spirit are synonymous with it.<sup>4</sup> In other literature it is argued that the term soul should be used to describe those qualities that “make us human,” such as creativity, intelligence, interpersonal communication, etc. This teaching of “soul” as a collection of properties will sometimes go hand-in-hand with an implicit denial of human nature, a denial that there is anything essentially unique about human beings.<sup>5</sup> For all practical purposes, the neuroscientists cited above have collapsed the concept of humanity into possessing a fully developed brain. If the “soulish” or human elements that are dependent on the functioning of a fully developed central nervous system are not present then the organism is not human. In principle, the “soulish” or advanced cognitive properties are there for all organisms to possess if they evolve to a certain functional point and attain the ability to form personal relationships or make voluntary moral decisions.

Other mammals, if enhanced through biological or genetic manipulation, could become functionally indistinguishable from the normal functioning of “current” humans. Since there is no such thing as a unique “human nature,” there would be no logic in withholding religious fellowship and human rights from such creatures, for they would now possess the “soulish properties” that define humanity in its complete, developed, or mature form. Also, there is nothing in this approach to preclude one from saying that very young children, the severely retarded adult or child, the neurologically impaired, or anyone else who lacks the “soulish” functional properties are outside of the realm of religious fellowship or human rights. Since they have not achieved, or perhaps have lost, the functional capacities that define “souliness” or “personhood” they are not afforded this title nor the rights traditionally linked with it.

In this line of thought “soul” or “souliness” is a set of functions that emerges from neurological functioning (the functions arise from a specific arrangement of physical interactions), rather than a human nature or essence that provides the foundation for the emergence of distinctly human neurological functioning: First you have the neurons, the neurons start working, and “the soul” emerges.<sup>6</sup> As is fairly evident, this position is nearly identical to that presented above by both Steven Rose and Michael Gazzaniga: Both positions are based on the organism achieving a certain developmental state. What is as troubling as the soul “emerging” is the equation of “soul” with a set of functions or processes, something cognitive psychologists might refer to as “mind.” This is the same *faux pax* Descartes made, but one that Aristotle and Thomas Aquinas did not: In Aristotle the mind is a subset of abilities defined by the essential nature of the creature (the soul). J.P. Moreland and Scott Rae rightly summarize that

Descartes reduced the soul to the mind, and now we have a mind-body problem instead of a more preferable soul-body problem. For the Thomist the mind is a faculty (a natural grouping of capacities) of the soul that may require certain physical states of affairs to obtain

before it is present; in fact, it is the soul that is responsible for the development of the brain and nervous system, and, more generally, the body.<sup>7</sup>

To restate the preceding in the simplest terms: You have a human mind and a human brain because you are a living human being. The Apostle Paul used the words “*soma psuchikon*” to describe the human being—a physical body informed by human nature. The concept of person in the older sense (a living human being) is intimately tied to the assumption that there is such a thing as underlying human nature (soul); the person is an individuated part of humanity.

The term “soul” is neither magical nor mystical, and there is no need to banish it from the lexicon of neuroethics, nor from modern philosophy and theology. It is simply a term that emphasizes a belief that there is indeed a nature peculiar to particular organisms. It is a presupposition or principle that underlies our thinking about humanity and the relationship between humanity and other species. Indeed, neurophysiologist M. R. Bennett and philosopher P. M. S. Hacker suggest that the concept of the soul, when properly understood and applied, can clarify thinking on numerous topics in neuroscience and psychology and help us to avoid the illogical conclusions that often flow from adopting a “brain centered” theory of the organism.<sup>8</sup> Let me employ one example to illustrate this tendency: While chiding the ancient assumption of Aristotle that the heart was the seat of thoughts and strong emotional feelings, the noted social psychologist and author David Myers triumphantly proclaims that “science has long overtaken philosophy on this issue. *It is your brain, not your heart, that falls in love.*”<sup>9</sup> A moment of reflection will perhaps lead one to imagine—or attempt to imagine—a brain “falling in love.” Reflecting further, one might comment that *people* fall in love—not brains, nor hearts, nor livers, nor kidneys. We may indeed see the chatter of popular science overtaking philosophy (and perhaps theology) here, because this sort of language and these sorts of assertions are commonplace in textbooks and popular discourse. However, the overtaking is being done on the cheap, and, as Bennett and Hacker might point out, science is being confused with philosophy and the philosophy being done is often quite poor. Myers, in attributing love to the brain and not to the person, has provided an excellent example of the very manner of thinking that Bennett and Hacker label the “mereological error.”<sup>10</sup> This consideration of human behavior is characterized by ascribing psychological, emotional, or personal attributes to the brain, certain parts of the brain, or even to cells of the brain—not to the person. Such an approach leaves us with the brain “loving” or “thinking” or “being conscious,” the left hemisphere “speaking,” the right hemisphere being “artistic,” the hippocampus “learning,” the occipital lobe “seeing,” or the amygdala “fearing.” The whole organism is left out of the equation, and in the contemplation of human thought or behavior these attributes are given over to anatomical regions rather than the organism. B.F. Skinner commented that “cognitive psychologists like to say that ‘the mind is what the brain does,’ but surely the rest of the body plays a part. The mind is what the *body* does. It is what the *person* does.”<sup>11</sup>

Perhaps ethics should also be added to this list of possible areas where employing the concept of soul leads to clarification. When we fail to differentiate between the concepts of soul and mind (cognitive processes or functioning) the result is often the philosophical, moral, and ethical confusion we see from many writers in neuroscience and psychology. The same manner of confusion results when we claim that use of the term soul simply means something nearly identical to higher cognitive processes. This author has heard physicians lecture that “the soul” is nothing more than these higher cognitive processes, to which audience members have rightly raised questions such as “What about my uncle in a coma? Does he have a soul?” or “What about my mother with Alzheimer’s? Does she have a soul?” The underlying worry here is that patients suffering from such neurological damage have, in some sense, “lost their humanity.” Writing early in the fourth century, the Christian apologist Lactantius succinctly distinguishes between the two terms in order to avoid such confusion and concern:

The soul is not the same thing as the mind. For it is one thing to *live* and another thing to *think*. And it is the mind of the sleeping person that is at rest—not the soul. And in those who are insane, it is the mind that is not functioning; the soul continues to function. For that reason, they are said to be out of their *minds*.<sup>12</sup>

### **Humanity as potential and actualization: Neurological and cognitive states in development**

Columnist Michael Kinsley, writing on the embryonic stem cell debate, comments that the issue should not be as difficult nor as controversial as it is:

It’s not complicated. An embryo used in stem cell research...is three to five days past conception. It consists of a few dozen cells that together are too small to be seen without the aid of a microscope. It has no consciousness, no self-awareness, no ability to feel love or pain. The smallest insect is far more human in every respect *except potential*.<sup>13</sup>

By placing the emphasis on current organismic functioning, Kinsley defines humanity in such a way as to make insects (even the smallest) more human than a human organism at the earliest stages of development. The importance is placed on current size, number of cells, and functioning. However, Kinsley also uses a key word that highlights the main reason that so many oppose such research on human embryos, and that is the fact that they possess such *potential* by virtue of the very fact that they are *human* embryos. While using the term, Kinsley ignores the ethical value and meaning of this potential, something missed or ignored by Rose and Gazzaniga as well. Similarly, D. Gareth Jones, a neuroanatomist and frequent writer on the issue of neuroscience and its importance for understanding the concept of personhood, remarks that there are those who believe that:

[T]o be a human being is to be a person, an identity that holds even at the very earliest stages of human existence. Hence, in human embryos personal abilities, including self-awareness, choice, and creativity, are

all *potentially present* from the earliest stages of development; they are not added at some later stage. If this position is accepted, we have to conclude that a nervous system is never relevant for an understanding of personhood...<sup>14</sup>

Upon reading comments such as those from Kinsley and Jones, one is left with the impression that participants in debates might be talking past one another in discussing what constitutes “personhood,” “potential,” and even “humanity” due to a lack of a common vocabulary. Whereas one group may be using the older definitions of “person” the other is speaking in the manner used by Rose and Gazzaniga. The same words are being employed, but now the meaning behind these words has shifted for one group but not for the other. At the very least, the functionalists may not be listening carefully to what critical philosophers and theologians are saying, because in many instances those critical of “brain centered” or “cognition centered” theories of what characterizes personhood take very seriously what the scientists are saying—they simply do not come to the same conclusions as those who base “personhood” upon neurological development.

Considering the aforementioned quotation from Jones, let us evaluate the position that if we accept a human being as a “person”—even at the earliest stages of development—because distinctively human traits are *potentially present* in the organism, “we have to conclude that a nervous system is never relevant for an understanding of personhood...” Theologians, philosophers, and ethicists who espouse the view that even at the earliest stages of life human beings are persons—due to *potentially present* traits—do indeed acknowledge the importance of neurological functioning. Almost all developing humans, at the embryonic stage, have the potential traits of consciousness, creativity, and the capacity for love because they are *human*—they are not rat embryos nor are they any other type or kind of embryo but human.<sup>15</sup> Unless there is some grave developmental defect or chemical or physical insult, the human organism will continue to progress through various stages of development and maturation both before and after birth. Due to this fact they will in all likelihood develop a central nervous system, and this central nervous system will itself develop and progress in the complexity of its functional capacities, never reaching a true static state, always changing in response to the world around it and allowing for the capabilities that are uniquely human. Many of the potentialities will then be *actualized*. However, many people may never fulfill all of the potentialities that they have as human beings, due to a whole host of economic, social, psychological, and neurological/biological factors, but we still value them as we do all other humans. The very potential for this nervous system—with all of the wonderful abilities that it allows—was there from the very beginning because it was *a human nervous system developing within a human being*.

The Anglican theologian Lindsay Dewar, specifically addressing the issue of moral theology, commented that “To prevent something good from developing is morally hardly distinguishable from destroying the end product when it has come into being.”<sup>16</sup> This conclusion is based upon an element of Aristotelian and Thomistic thought usually worked out in scholastic moral theory, that

the worth of a thing is dependent not upon the actualization of potential, but upon the potential itself that rests within the nature or essence of a thing.<sup>17</sup> A human being, having a certain nature, has certain potentialities based upon this nature. Knowledge of and concern for the human nervous system is in no way foreign to this line of thought—indeed any physician would of course wish to know how best to foster and maintain the health of the brain during all stages of development before and after birth and how to avoid or prevent damage to this very delicate arrangement of cells and chemicals. We know that basic intelligence, proper moral development, artistic and musical ability, etc., all depend on a properly functioning nervous system and its relation to the other systems of the human body, and that accidents and brain damage can rob people of these abilities. Even if these abilities are diminished by disease or external trauma, we should still view these individuals as *persons* because they are indeed still living human beings.

Kinsley and Jones have used and seemingly rejected the language of “potential” but have failed to fully examine why it is being used in the context of biomedical ethics, or how others have used it while also addressing and incorporating current findings in neurology and psychology. In examining the bioethical reasoning of Moreland and Rae, mentioned above, we see that the functioning of the nervous system is not an afterthought and that most Thomists do indeed believe that a properly functioning brain is irrevocably linked to our proper cognitive functioning as human beings. However, where many Aristotelians and Thomists part company with the functionalist approach is the assumed dependence of the metaphysical nature of a human being, and hence the human being’s worth and classification as a person, on some level of neurological development and cognitive processing. This functionalism tends too much towards adopting a moral philosophy of *imparted worth*, a worth decided upon by external functional evaluation.

### **Conclusion: Human uniqueness presupposed in biomedical research**

Biomedical research is based upon philosophical foundations that cannot be demonstrated using scientific research rooted in the experimental method. In the very process of trying to help other human beings over saving the lives of other species we are affirming that *human life has the greater value, and it is unique*. The realness of humanity is taken as a foundation for our actions, whether or not this realness is explicitly stated. Human life has value. This is a presumption that underlies almost all research into human neurological functioning, and it is *not* a statement that is open to scientific evaluation, regardless of the tendency of many within the scientific community to confuse ethical and moral questions with scientific questions. Consider this passage from a textbook dealing with the clinical applications of neuroscience:

...should aborted fetal tissue be used to repair the faulty mechanisms that regulate such neurodegenerative diseases as Parkinson’s disease? Should society treat criminals differently if (or when) neuroscience finds that the underlying brain mechanisms for such behavior are

malfunctioning? *These and others issues should be addressed as scientific questions.*<sup>18</sup>

This is a common refrain from many who view moral intrusions into science, whether they come from secular humanists or theists of different varieties, as unwarranted and “unscientific” or “anti-scientific”—a hindrance to scientific progress. This approach should be thoughtfully and critically countered, in that these issues cannot be logically addressed as “scientific questions.” By suggesting that science *can* answer these questions is to extend the methods of science into areas where they cannot go. How can science answer the question “Does human life have *value*?” or “Is it *good* to alleviate suffering?” or “Is it *right* to kill a rodent—or a hundred rodents—in order to save the life of a single human?” or “Is the use of fetal tissue from aborted fetuses *morally justifiable*?”

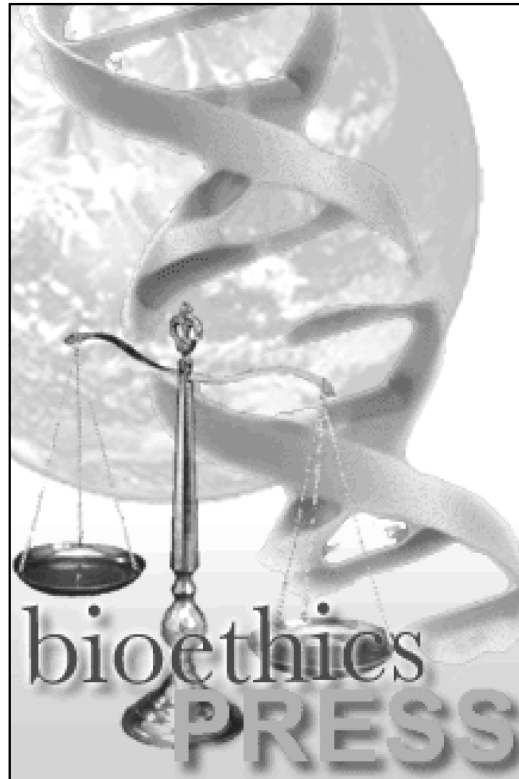
No amount of experimentation can address these moral questions, and repeated attempts to apply the hypothetico-deductive method will not result in an answer. One can rightly consider information that is gained *from the scientific method* and factor this into moral decision-making, but the moral choices cannot be made *with* the scientific method. Metaphysical and moral presuppositions are not open to testing through the scientific method; instead, they are logical and necessary prerequisites to the scientific endeavor as a whole. We presuppose that there is order in organisms and their functioning and that the human mind can comprehend this order inherent in the world around us. We presuppose that it is *good* to understand the functioning of the human organism, to preserve human life, to alleviate human suffering. We cannot prove any of these things scientifically. We assume their metaphysical reality. Indeed, without these presuppositions science has no philosophical foundation and no moral compass to guide its practice and the application of its findings. The rationale for biomedical research in general and clinical neuroscience research in particular is rooted in the older concept of the person as a member of the human species, possessing value and worth based upon that fact alone. **E&M**

## Endnotes

- 1 Steven Rose, *The Future of the Brain: The Promise and Perils of Tomorrow's Neuroscience*, (New York: Oxford, 2005), 113. The title of the chapter from which this quote is taken is “Becoming a Person.” The preceding chapter is “Becoming Human.”
- 2 Michael Gazzaniga, “All clones are not the same,” *Observer*19:5 (2006). Italics added for emphasis.
- 3 For the history of the divergence between the functionalist concept of the person and the traditional concept, see David Albert Jones, *The Soul of the Embryo*, (London: Continuum, 2004).
- 4 See *Whatever Happened to the Soul? Scientific and Theological Portraits of Human Nature*, eds. Warren S. Brown, Nancy Murphy, and H. Newton Malony (Minneapolis: Fortress, 1998); *From Cells to Souls: Changing Portraits of Human Nature*, ed. Malcolm Jeeves (Grand Rapids, Michigan: Eerdmans, 2004); *What About the Soul? Neuroscience and Christian Anthropology*, ed. Joel L. Green (Nashville: Abington, 2004).
- 5 See the paraphrased comments of Fraser Watts in Warren S. Brown and Malcolm A. Jeeves, “Portraits of Human Nature: Reconciling Neuroscience and Christian Anthropology,” *Science and Christian Belief* 11:2 (1999): 139-150.



- 6 “The soul is the music made by an ensemble of players (the various lower-level cognitive abilities) who perform together to create the capacities for interpersonal dialogue as well as self-awareness and internal self-reflection (intrapersonal experiences). Played out in relationship to God who chooses to be in dialogue with his human creatures, the cognitive capacity for personal relatedness embodies spirituality.” From Warren S. Brown and Malcolm A. Jeeves, “Portraits of Human Nature: Reconciling Neuroscience and Christian Anthropology,” *Science and Christian Belief* 11:2 (1999): 139-150.
- 7 J.P. Moreland and Scott B. Rae, *Body and Soul: Human Nature & the Crisis in Bioethics*, (Downers Grove, Illinois: InterVarsity, 2000), 200.
- 8 M.R. Bennett and P.M.S. Hacker, *Philosophical Foundations of Neuroscience*, (Blackwell, 2003).
- 9 David G. Meyers, “A Levels-of-Explanation Response,” in *Psychology & Christianity: Four Views*, eds. Eric L. Johnson and Stanton L. Jones (Downers Grove: InterVarsity, 2000), 111. Italics added.
- 10 M.R. Bennett and P.M.S. Hacker, *Philosophical Foundations of Neuroscience*, (Blackwell, 2003).
- 11 B.F. Skinner, “Whatever happened to psychology as the science of behavior?” *American Psychologist* 42 (1987): 780-786.
- 12 From David A. Bercot, *A Dictionary of Early Christian Beliefs*, (Peabody, Mass: Hendrickson, 1998), 625.
- 13 Michael Kinsley, “The False Controversy of Stem Cells,” *Time Magazine*, May 31 (2004). Italics added for emphasis.
- 14 See D. Gareth Jones, “The Emergence of Persons” in *From Cells to Souls*, 14-15. In the reference quoted, Jones is referring to Gilbert Meilaender, *Bioethics: A Primer for Christians*, (Grand Rapids, Michigan: Eerdmans, 1996). As the title “The Emergence of Persons” implies, defining “person” from the standpoint of neuroscience puts considerable weight on certain functional capacities that are dependent upon neurophysiology. In portions of Jones’s work, especially *Our Fragile Brains: A Christian Perspective on Brain Research* (Downers Grove, Illinois: InterVarsity, 1981), Jones makes statements that seem extremely close to contradicting a position that brain states are important for defining “personhood” or that personhood “emerges.” Consider this quote from page 278 of *Our Fragile Brains*: “All individuals are therefore to be treated as human beings with God-given dignity, regardless of their value to society or of their brain states.”
- 15 Asking the questions “When does the fetus become a person?” or “When does the embryo become a person?” is akin to asking “When does the adolescent become a person?” These are developmental stages that a person goes through, not stages that at some point produce a person. When we set a neuro-cognitive litmus test for “personhood,” someone can always move the bar to take the definition away from others.
- 16 Lindsay Dewar, *Outline of Anglican Moral Theology*, (Oxford: Mowbray, 1968), 84-85.
- 17 See F.C. Copleston, *Aquinas*, (London: Penguin, 1955); John F. Crosby, *The Selfhood of the Human Person*, (Washington: Catholic University of America, 1996). For its application in biomedical ethics, see Scott B. Rae and Paul M. Cox, *Bioethics: A Christian Approach in a Pluralistic Age*, (Grand Rapids, Michigan: Eerdmans, 1999).
- 18 From Kelly Lambert and Craig Howard Kinsley, *Clinical Neuroscience: The Neurobiological Foundations of Mental Life*, (New York: Worth, 2005), xxv. Italics added for emphasis. Per the comment concerning the treatment of criminals: Even if researchers were to find that a criminal had a pattern of activity that contrasted markedly when compared to “the average” or “normal” brain, would this prove that if one had such neural patterns that it would guarantee “criminal behavior”? Only one case where a person had such a pattern but did not show evidence of the behavior would call this conclusion into question. And even if a criminal had such abnormal activity, would it rule out the possibility that years of engaging in specific behaviors didn’t change the brain’s activity to produce such a pattern?



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## BOOK REVIEWS

### **The Matrix: Charting an Ethics of Inheritable Genetic Alteration**

Marilyn E. Coors. Lanham, MD: Rowman & Littlefield, 2002.

ISBN 0-7425-1401-3; 161 PAGES, PAPERBACK, \$23.95

In a succinct fashion, Dr. Marilyn Coors, assistant professor of bioethics and genetics at the University of Denver, has introduced the reader to an informative discussion of genetic modification directed towards the goal of proposing an inheritable modifications matrix. Drawing upon divergent ethical theories, this matrix purportedly creates a dialogue of common interests in order to lead the way beyond the current conceptual limitations of the contemporary ethical debate. Coors has effectively located this discussion in an accessible manner by introducing the relevant science (in non-technical language) and by distinguishing between the bioethical, religious (particularly Roman Catholic perspectives), and philosophical components of the issue.

Having laid the groundwork, Coors next explores the four elements of the moral event: the *Agent* (Virtue Theory & Edmund Pellegrino), *Act* (Hans Jonas & Immanuel Kant), *Circumstances* (Emmanuel Levinas & Jere Surber), and *Consequences* (Classic Utilitarianism & R. M. Hare). This discussion welcomes newcomers by helping them easily navigate concepts and persons within ethical theory (particularly through the useful summary tables sprinkled throughout the text), but remains sophisticated enough to sustain the interest of more advanced readers. Her endgame is to highlight the strengths of each competing approach and to identify the common ground (primarily the relationship between human dignity and biotechnology).

The fruition of this groundwork is found in the ambitious conclusion that creatively seeks to weave all of these diverse strands into a single “ethical matrix” by coordinating two axes (the scientific and the ethical) in a pursuit for common ground to lead us out of the current impasse in ethical debate. For the scientific axis, Coors resurrects a typology employed upon the distinctions between somatic cell (non-inheritable) and germ line (inheritable) modification and their intended purposes. Thus, along with three developmental stages, this axis is also concerned with the issues of enhancement and degradation. The ethical axis, on the other hand, consists of seven questions drawn from the insights of the four ethical elements: benefit, justice, responsibility, difference, integrity, discourse and wisdom. Finally, Coors closes the volume with a brief case study to demonstrate the application of this matrix.

Overall, Coors is to be commended for an accessible volume that briefly covers such a vast discussion. Admittedly, this brevity raises some minor concerns. Given her awareness of moving too quickly to bridge the gaps present in the divergent ethical approaches, the move from background discussion to synthetic proposal was somewhat abrupt and could have evidenced a greater degree of nuance in the identification of common ground between these traditionally adversarial approaches. The dignity that Coors identifies as common ground may be substantively different when pressed to account for the philosophical (and religious) underpinnings inherent within distinctively different ethical frameworks (and for that matter by the ethicists discussed). While the ethical matrix Coors proposes demonstrates promise, a more robust interaction with the ramifications of this method would have been preferable. Despite these concerns, this book remains a contribution to the current status of inheritable genetic modification.

**Reviewed by Michael J. Sleasman, MDiv, PhD (cand)**, who is an Instructor at Trinity International University, Deerfield, Illinois, USA.

## **Alternative Medicine and Miracles, a Grand Unified Theory**

Reginald O. Crosley. Lanham, MD: University Press of America, Inc., 2004.

ISBN 0-7618-2893-1; 286 PAGES, PAPERBACK, \$33.50

This volume is undoubtedly the most complicated, convoluted and confusing book I have read in a long time. It is strange, perhaps even weird, in tackling a most unusual series of topics. While spinning reams about vortexes, strings and whirling holes, the discussion is difficult to follow: "This model of a whirling vortex is at the core of our theory of miracles and miraculous healings. It is associated with many wonders in the cosmos and our life. The fabric of the universe is the myriaforce that is a coherent harmonic of virtual states. It is at the same time psi-force, bio-force, electro-magnetic, strong, weak or radioactive force and gravitational force. In fact it is that same myriaforce that exhibits itself either as gravity or antigravity. Each force or dimension can metamorphose into each other and all of them are psychic force." (p. 18) This book is not intended for a quiet, fireside read.

This volume, rather, is highly technical and utilizes words and phrases rarely seen: *adorcistic*, *caduceus*, *hylozoism*, *philogistic*, and *undompted*. Since the author thoughtfully includes a glossary of 58 items (many of his terms are not in my dictionary) as well as a bibliography of about 170 items, I spent a good deal of time looking back and forth in an effort to understand expressions used. While presumably a textbook for those interested in "phenomena," perhaps it would be better to consider it not only an expression of technicalities but also an attempt to lend scholastic credence to what is termed the "phenomena of healing." While I cannot be certain of the author's beliefs, he references rituals to transfer human illness to a stone and stories of people captured by fairies or being tele-transported by an energy field.

Crosley explains Old and New Testament Biblical miracles as due to a whirling vortex exuding both power and energy. He argues that Jesus was able to do miracles because he practiced self-discipline, prayed and meditated. Since there is no reference to Divine power, one is left with the impression that anyone who follows the same practices may be able to attain the same result. His last chapter, in fact, gives a "how to" for becoming a miracle worker.

While the subjects of Crosley's book are receiving increasing scrutiny in an effort to explain the previously unexplainable, and while it appears to be a legitimate area of investigation, it is certainly my hope that there are clearer and more readable texts than this one. On the back cover, it states that "the exotic scientific principles revealed in quantum mechanics, relativity theories, strings theory, and chaos theory directly corresponds to alternative medicines and miraculous healings. Crosley in a 'grand unified theory,' holds that modern physics underlines the phenomena observed in unconventional modalities." That statement should have warned me that I was embarking on a most unusual read.

If you wish to hear more about wormholes, whirling vortexes, bio-energy fields, shamans, black magic, and trances, then this book will talk a great deal about these matters. Despite his efforts, though, I am not at all certain that the author has arrived at a "grand unified theory" of alternative medicine and miracles.

**Reviewed by Paul E. Toms, BA, BD**, who served as Senior Minister of Park Street Church, Boston, Massachusetts, for 25 years, 33 years as a Trustee (and six years as Dean of Chapel) at Gordon-Conwell Theological Seminary, South Hamilton, Massachusetts, and prior to that traveled to various parts of the world teaching and preaching on the mission field.

## **A Multidisciplinary Approach to Health Care Ethics**

Drew E. Hinderer and Sara R. Hinderer. Mountain View, CA: Mayfield Publishing Company, 2001.

ISBN 0-7674-1302-4, 192 PAGES, PAPERBACK, \$45.00

*A Multidisciplinary Approach to Health Care Ethics* is a book written by educators for the purpose of education. The book successfully engages bioethical issues as well as theories of ethics, requiring minimal prior knowledge on the reader's behalf. The authors state that "the goal of this book is not to guarantee universal agreement, or to make sure everyone is comfortable, but to help students develop skillful, professionally responsible ethical reasoning." (p. 2) This goal is accomplished.

The authors suggest that conflict arises when competing interests, values, or concerns cannot all be simultaneously accommodated. The conflict becomes ethical in nature with the appropriate application of standards such as fairness, justice, rightness and responsibility. In other words, exactly what OUGHT one to do? The authors' method of unpacking this issue is by presenting a format of appropriate clinical cases followed by generally succinct didactic information interspersed with open-ended questions. The questions, for the most part, are unanswered in the text, but there is more than adequate factual information to guide discussion through the (more than occasionally) murky waters of bioethics. This design format lends itself nicely to a directed application of the issue at hand, and it is the central thread of the book.

The middle section of this book is an understandable rendering of some of the major Ethical Theories: egoism, consequentialism, virtue ethics and others. The authors' treatment of these theories is presented in a usable form that is generally free of the more complicated explanations and developments often used by the original theorists. These more simplified discussions offer the novice a comprehensible reference that will also serve well if future review is required. The student who demands a more erudite development of these theories will have no problem in satisfying his thirst elsewhere.

The authors conclude their book with a discussion of germane health care issues such as the health care crisis, euthanasia, and confidentiality. This section contains timely information such as some of the governmental health plans that were bantered around Capitol Hill in the late 1990's. Furthermore, in addressing the maelstrom of euthanasia, the authors raise appropriate questions regarding the activities of Jack Kevorkian. The specific discussion of medical confidentiality exposes the reader to a simple formula that helps to ascertain whether or not there may be a justifiable disclosure of private and confidential medical information.

*A Multidisciplinary Approach to Health Care Ethics* is a welcome addition to the relative dearth of usable entry-level information written for the bioethics genre. I highly recommend this book for those who are newly engaged in the world of bioethics.

**Reviewed by Ferdinand D. (Nick) Yates, Jr., MD, MA (Bioethics)**, who is a practicing pediatrician in Buffalo, New York, and Director of Medical Ethics at Mercy Hospital of Buffalo, Buffalo, New York, USA.

## **Birth Control in China 1949-2000: Population policy and demographic development**

Thomas Scharping. London and New York: RoutledgeCurzon, 2003.

ISBN 0-7007-1154-6; 406 PAGES, HARDCOVER, \$133.49

China scholar Thomas Scharping brings together a wealth of material detailing the history of reproductive policy in China and its impact on family, culture, economy, and politics. Not only does he trace the history of Chinese leaders' concerns regarding overpopulation, but he also discusses the intellectuals who were influential in making models for optimal population growth. For decades, reproductive laws have been based on those theories and predictions. Scharping documents 52 years of policies governing marriage, fertility and births, as well as the changing strategies for implementation and enforcement.

Amid the scholarly research and analysis, Scharping presents the compelling tale of an intense clash between governmental birth-control decrees and deeply held Chinese cultural beliefs -- a story of concerted propaganda, multiple layers of bureaucracy, and an almost unimaginable invasion of personal and family life. It is also a story of grassroots resistance, cunning evasions of the law, and rampant fraud at local levels. Scharping's analysis of birth and population records suggests that official demographic information is inaccurate due to bureaucratic underreporting of births to meet strict quotas set by central powers. Even so, population planning targets have been repeatedly missed resulting in evolving strategies to further enforce birth limits: making birth permits more difficult to obtain, increasing sophistication and aggressiveness of investigations, and escalating penalties.

Scharping details extensive procedures (including medical exams for eugenic purposes) that a couple must complete to apply for a birth permit. He cites from official documents how "out-of-plan" pregnancies are to be "remediated" by abortion. Women with unauthorized pregnancies (including all single women) not immediately aborted face social and psychological pressure, economic penalties (such as confiscation of wages), or even arrest and forced abortion. An "unauthorized child" may subject the family to impoverishing fines, confiscation of property, decreased food rations, and forfeiture of health and educational benefits for that child.

Unintended consequences of these policies include an aging population as well as a sex-ratio imbalance. Scharping discusses the widespread practice of abortion of female fetuses, and the statistical evidence of female infanticide. He also examines the roles of academia and medicine in the system. Medical personnel are inherently involved in reproductive policy, either by enforcing the law (eugenic decisions, mandated gynecologic exams, obligatory IUD placements, involuntary abortions and sterilizations) or subverting it (ultrasounds to determine fetal gender, unauthorized IUD removals, faux sterilizations, and falsification of medical records).

While studiously avoiding moral judgment and ethical analysis, Scharping has produced a book which is comprehensive in content, well organized, and well written. It is invaluable to anyone (including parents who have adopted from China) wanting to better understand Chinese culture and is a worthwhile reference for readers interested in demographics, medical ethics, and public policy.

**Reviewed by Leah M. Willson, MD, FAACP, FACPeds**, who is a practicing pediatrician in Hutchinson, Minnesota, USA.

## Genetics: Science, Ethics, and Public Policy (Readings in Bioethics)

Thomas A. Shannon, Editor. Lanham, MD: Rowman & Littlefield Publishers, 2005.

ISBN 0-7425-3238-0; 224 PAGES, PAPERBACK, \$22.95

While this anthology covers a wide range of bioethics voices from law, medicine, and the humanities, a clue to its approach is found in the editor's introduction: "One important development in the field has been the informal division into clinical and institutional bioethics" (p. xi). The editor, Thomas A. Shannon, is a professor of religion and social ethics at Worcester Polytechnic Institute; he continues his introduction by describing the nature of the debates within these broad categories. In other words, according to Dr. Shannon, bioethics is all about *process*. This preconception overlooks the concerns of many who engage in the discourse of bioethics, practitioners on the front lines or academicians, very concerned about the *values* that inform the process.

Because of his presumption, the choice of articles is more utilitarian than deontological. The opener, by well-known writer Francis Fukuyama, would seem at first to be an exception, but it falls short. His paper, ambitiously entitled "Biotechnology and the Threat of a Posthuman Future," sounds a reasonable alarm about how genetic technologies threaten our shared understanding of human nature. Yet Fukuyama provides no basis for defending human value except for a vague intuition. In fact, he undermines his own case by claiming that "There are no fixed human characteristics, except for a general capability to choose what we want to be, to modify ourselves in accordance with our desires" (p. 3).

This disturbing viewpoint is echoed in the second paper, "Crossing Species Boundaries," by university professors Jason Robert and Françoise Baylis. These authors claim that cross-species hybrids, human and animal, should be rejected because such would create "inexorable moral confusion" in our relationships with other species (p. 23). Apparently, this is the only basis for their objection, as they ruled out religiously informed or intuitive arguments.

Even so, other articles in this volume, while maintaining a utilitarian approach, raise some interesting points. One chapter entitled "Ethics of Preimplantation Diagnosis for a Woman Destined to Develop Early-Onset Alzheimer Disease" asks the difficult and uncomfortable question: is reproduction an unquestionable right for women or men who already have an inheritable genetic defect? Other chapters address procreation for donation, genetic screening of populations, patenting genes, and two chapters discuss stem cell research (one focusing on public policy, the other on more technical scientific aspects). An important omission from the volume is any discussion of genetic enhancement.

This text may serve as an introduction to the area of genetic ethics in science and public policy as it provides some useful background to the ethical debates. However, readers are cautioned to look elsewhere for deontological or theoretical arguments.

**Reviewed by Dennis Sullivan, M.D., M.A. (Ethics)**, who is Professor of Biology at Cedarville University and Director of the University's Center for Bioethics, Cedarville, Ohio, USA.

## Transplantation Ethics

Robert M. Veatch. Washington, D.C.: Georgetown University Press, 2000.

ISBN 0-8784-0811-8; 427 PAGES, HARDCOVER, \$29.95

As professor of medical ethics at Georgetown University's Kennedy Institute of Ethics, Robert M. Veatch is an able dissector of the ethical principles involved in the arena of human organ transplantation. As a member of the United Network for Organ Sharing (UNOS) Ethics Committee, and formerly chair of its Organ Allocation Subcommittee, Veatch has practical experience with many of the issues involved in the distribution of organs for transplantation. As chair of a local Organ-Procurement Organization (OPO) Task Force on Directed Donation, he has particular insight into procurement. While *Transplantation Ethics* is certainly a reference, it is more an exposition of the current state of affairs in organ transplantation for this country. A thorough read of this tome is essential, for details often ooze from the pages like blood components from leaky capillaries.

Following an introduction of religious and cultural perspectives and a short primer on ethical theory, the book is divided into three sections: "Defining Death," "Procuring Organs," and "Allocating Organs." In "Defining Death," Veatch begins the discussion with the compelling case of Bruce Tucker, whose death and organ harvesting in 1968 brought to light a number of ethical questions. The author then considers the three primary options for defining death: heart/lung criteria, whole-brain, and higher-brain concepts of death. Veatch clearly interprets the first and second as inadequate, and makes his case for the third, albeit with modification. He rightly avers that the debate regarding the definition of death is really about the "moral status of human beings" and further states that the "choice of who is alive . . . is fundamentally a moral, philosophical, or religious choice, not a scientific one." (p. 111). He argues for the acceptance of a higher-brain concept of death; in light of the pluralistic world in which we live, he also feels that the inclusion of a conscience clause allowing for the use of heart/lung criteria is necessary.

Veatch addresses organ procurement in the second section, beginning with whether the process represents gift or salvage. He exposes "presumed consent" for what it is—"taking the organs without consent" (p. 160)—and calls for veracity in language. He explains that the dead donor rule requires that the organ donor must be dead before the organs are procured. He then proposes several groups of living donors as sources—specifically non-heart-beating donors, anencephalic infants, and PVS patients. (pp. 184-5) One of the more troubling passages in this text is Veatch's description of where this leads when he states,

...It appears that the more accurate account of these proposals would be that their advocates, among whom I include myself, really are putting forward a proposal for further modification of the definition of death. They are proposing a higher-brain concept of death in which permanently vegetative individuals — who, by definition, can never again be conscious — would be treated as deceased. Of course, if they are dead, then organ procurement would not violate the dead donor rule. I think all the cases I have discussed so far — non-heart-beating donor, anencephalic infants, and permanently unconscious individuals — are (or should be) really proposals to apply the dead donor rule curatively, pressing the limits of the borders between life and death. (p.185)

To advocate the removal of organs from these populations is no small matter. "Non-heart-beating donors" is a recent, and not uniformly accepted, addition to the list of potential donors. Procurement of organs from anencephalic infants and the permanently unconscious is of concern. Indeed, these are all vulnerable populations among us and the reader may well wonder who will be next. Is the definition of death being altered so that the rest of the living can get on with their lives, some with parts from the newly "dead"?

The third section of the book deals with the difficult task of allocating available organs which are always in short supply. While doing a good job of description, an organizational chart



would help, for the myriad of entities and jurisdictions involved in the procurement and allocation of organs is complicated by layers of political boundaries. He attacks the concept of justice in allocation from the somewhat surprising perspective of directed donation. His conclusion — that the experts of technology (professionals involved with transplantation) should not be charged with the allocation of organs — is correct and for the reasons he states. He calls the choices “fundamentally moral and philosophical,” and says that they “cannot be made on the basis of technical knowledge alone.” (p. 372).

Overall, Veatch has done an admirable job of assembling a compendium of difficult issues involved in organ transplantation into one text. His discussion of the differing types of transplants, their sources, and the allocation of same not only invites, but fairly demands, the reader wrestle with these issues. He repeatedly calls for wide public debate about the various proposals he presents; indeed, to passively accept these would be a grave error. *Transplantation Ethics* is a great springboard for the discussions in which our society needs to engage. Throughout the book, Veatch asks in various formats: “When, and how, shall we treat a body as dead?” In our culture, this is a question to be answered by all.

**Reviewed by D. Joy Riley, MD, MA (Bioethics)**, who serves as Executive Director of the Tennessee Center for Bioethics and Culture, USA.

## **The Genius Factory: The Curious History of the Nobel Prize Sperm Bank**

David Plotz. New York: Random House, 2005.

ISBN 1-4000-6124-5; 262 PAGES, HARDCOVER, \$24.95 (USA), \$34.95 (CANADA)

“We are on the brink of the age of genetic expectations. Soon—maybe not in five years, but probably in fifty—fertility doctors will be able to identify and manipulate genes for ‘intelligences’ and ‘beauty.’ At first, building better babies will be a science, as doctors figure out how to swap genes in order to save kids from terrible diseases. But eventually it will become a consumer movement. Parents will demand the gene treatments not for health reasons, but to make their kids ‘better.’ (‘Doc this kid has *got* to play tennis.’) Eugenics will be chic again, though not by that name.” With this un-labeled warning from the prologue of *The Genius Factory*, we are introduced to the present-day world of sperm banking and assisted reproductive technologies.

David Plotz does not claim to be an ethicist. Even so, he manages to amplify the ethical issues raised by ever-burgeoning reproductive technologies. In *The Genius Factory*, Plotz details his journalistic efforts to find sperm donors as well as children born to mothers receiving sperm from the Repository for Germinal Choice, dubbed the “Nobel prize sperm bank.” The result is an easily readable book which can be classified as an account of sperm banking, an introduction to assisted reproductive technologies and their consequences, a history of eugenics, a biography of Robert K. Graham (the founder of the Repository of Germinal Choice) or of William Shockley (a Nobel laureate who is its only known Nobel contributor), or an investigation into the missing sperm donors or of the children born from purchased sperm. While his original intent was to write a history of the Repository for Germinal Choice from the viewpoint of sperm donors, the mothers and their children, Plotz’ purpose was altered by his sources who, living with the emotional void created by being without a husband or father, asked him to find their donors.

Plotz ends his book by saying that “This is a book about what it means to be a parent.” Contrast this with the portrait of Robert Graham, a man not concerned with parenting but rather obsessed with the characteristics he felt made “better” people. Graham judged some of those characteristics to be absent in himself, possibly motivating his endeavor to protect future generations from “genetic degradation.” For Graham, every action was motivated its effect on the future while nothing was done for its simple pleasure. Though Graham was

seemingly unaware of the similarities, Plotz draws parallels with the old eugenics movement celebrated in the United States and Europe.

The eugenics movement, which Plotz confusingly wrote was disgraced by Nazism, was related to parenting only inasmuch that “good” (potential) parents were expected to want only children with desirable characteristics. He points out, however, that the eugenics movement was fueled by the fear white Protestants had of both immigrants and Black people. The description of positive and negative eugenics might leave one believing that positive eugenics is, at the very least, morally neutral. In this, Plotz does an effective job as a journalist, reporting objectively and leaving conclusions to the reader. Plotz rounds out the overview of eugenics with descriptions of books touting eugenics and resulting legal cases.

The Nobel Sperm Bank, referred to as Graham’s “experiment,” was “bad” science. Not only did Graham embellish the catalog descriptions of sperm donors to make them more appealing, he failed to control for “nurture.” Recipients were not randomly chosen, but rather were self-selected, fueled by hopes and visions of exceptional children. While there was one story of a “donor” who met and loved one of the eighteen children he fathered, most other stories had no such positive results. Included are stories of sperm donors who deceitfully present themselves as geniuses, those with questionable motivations for multiple sperm donations, and those whose lives failed to reflect their genius level intelligence.

This book would be excellent to recommend to those considering insemination by donor sperm, as it details experiences and emotions of sperm recipients and their offspring. I would also recommend it for those introducing themselves to the world of assisted reproductive technologies, as an adjunct to the technical information.

**Reviewed by Claretta Yvonne Dupree, RN, PhD**, who is an Assistant Professor at the Medical College of Wisconsin in the Department of Pediatrics Hematology/Oncology, and Director of Research for the Palliative Care Program at the Children’s Hospital of Wisconsin, USA.

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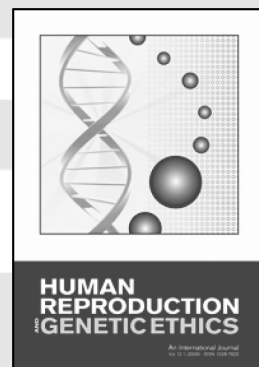
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