

# *Birth, Death & Technoscience*

## **Searching for Values at the Margins of Life**

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### *The Changing Context of Birth and Death*

We humans have always formed our most important values and sought meaning in life by weaving a metaphorical fabric around the two marker events of every human life, birth and death. Our perceptions of birth, and the values traditionally attached to it, are being challenged and changed, however, by the new technoscience. The “new genetics” debate is the context in which that is occurring. There is also a companion debate about euthanasia,<sup>1</sup> focusing on the values that should govern death. While euthanasia is not a new issue, the current debate is of a different order (it is widespread in western democracies) and possibly different in kind (it is based on individual rights) from those in the past. It is not an accident that we are presently debating both *eu-genics* (good at birth) and *eu-thanasia* (good at death), because the substance of these two debates is linked in many ways. Consequently, what we decide in terms of ethics and law in one of them is likely to have an impact on the other.

Reprogenetics<sup>2</sup> has faced us with unprecedented possibilities regarding “birth,” such as the passing on of human life through cloning. Such technologies challenge our traditional values and make us aware of a values void, at least at a societal level<sup>3</sup> –

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<sup>1</sup> Throughout this text I use the word euthanasia to include physician-assisted suicide. In some circumstances, not relevant here, they must be differentiated.

<sup>2</sup> I.e., reproductive technologies and genetics.

<sup>3</sup> Margaret A. Somerville, "Ethics and Architects: Spaces, Voids, and Travelling-in-Hope", in Louise Pelletier and Alberto Pérez-Gomez, eds., *Architecture, Ethics and Technology*, Institut de recherche en histoire de l'architecture,

whether that void exists because we no longer agree on the values that should apply, or because the situation is so novel that we do not have immediately apparent values to govern it.

Just twenty-five years ago, we were stunned by the birth of Louise Brown, the first test-tube baby. Today *in vitro fertilization* (IVF) is routine medical practice. Now we face the advent of technologies much more radical than IVF. They do not merely try, as IVF does, to repair nature when it fails, but to make possible what is impossible in nature. As well as cloning, these technologies include: creating embryos from three or more genetic parents or, in the future, from two ova or two sperm; using human embryos as repair kits for ourselves, for instance to make replacement organs or tissues; and choosing the characteristics of our children. Should we just allow individuals and the market to decide which of these technologies will be used and how – an approach based on a combination of intense individualism and market-place ethics? Or should we as a society draw lines that must not be crossed? If so, where should they be drawn?

That is where we do not agree. And in a pluralistic, multicultural, secular, post-modern, democratic society such as Canada, it is unlikely that we will find such agreement. But we do not have a “no values” option; choosing not to articulate or defend any values is itself a values choice. In short, *some* societal values will govern these technologies, even though we do not all agree on them. The same is true for the values that will govern human death. What process, then, should we use to determine these values? It is likely that we will also disagree in that regard.

Finding shared values in the contemporary public square is a very complex process. It requires careful research to develop approaches to doing so that are ethical and just. Those approaches must foster an ethics of complexity that will allow us to take into account the claims and needs of both individuals and society; different cultures and world views; and a range of (sometimes conflicting) understandings of human nature, of the human-nature relationship, and of what it means to be human.

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Canadian Centre for Architecture, McGill University and Université de Montréal (McGill-Queen's University Press; Montreal 1994), pp. 61-79.

We are only at the very beginning of developing such an ethics.

One common mistake in searching for values, and for the process that should be used to establish them at the societal level, deserves mention. That is to equate morality and ethics with democracy. Democracy is morally and ethically neutral; it is only as ethical as the voters and their elected representatives make it. A majority of Canadians voting in favour of, for example, creating human embryos in order to use them for stem cell research, or in favour of euthanasia, does not mean that they are morally and ethically acceptable practices. One cannot do ethics just by majority vote. Indeed, current computer-based research in the philosophy of science demonstrates the impact and importance of even just a few voices crying in the ethical wilderness. Very large decision-making sets (for instance, 5000 or 10,000 consecutive decisions), where one group of participants decides to act ethically and the other unethically, show that as long as a small nucleus of ethical decision-makers remain, ethics can survive and eventually flourish again, even when the vast majority of people act unethically. But if those few voices are lost, so too is ethics.<sup>4</sup> That is both a very sobering and a very hopeful message.

### *Human Dignity and Respect for Life*

Respect for human dignity is often put forward as the primary value that should govern both birth and death. In the 21<sup>st</sup> century, that translates to the values that should govern the new genetics and the decision about legalizing euthanasia. But there are dangers, not always recognized, in using this concept. There are two versions of the concept of dignity – intrinsic human dignity and extrinsic human dignity – the applications of which can have radically different outcomes.<sup>5</sup> Intrinsic human dignity

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<sup>4</sup> J. Bigelow, "Simpson's Paradox and the Selfish Universal", paper presented at the Australasian Association for History, Philosophy and Social Studies of Science Conference, Melbourne 2001.

<sup>5</sup> Margaret Somerville, *Death Talk: The Case against Euthanasia and Physician-Assisted Suicide*, McGill-Queen's University Press; Montreal, 2001. See also S. D. Stolberg, "Human Dignity and Disease, Disability, Suffering: A Philosophical Contribution to the Euthanasia and Assisted Suicide Debate," abstract, *Humane Medicine* 11 (1995), pp. 144-7.

means that every human being is seen as having innate human dignity which must be respected. At a minimum, it requires respect for the life of that person. Extrinsic human dignity focuses on the “quality of life” of the person and, if this is perceived to be below a certain level, the person is regarded as lacking dignity. Proposals to remedy situations of a perceived lack of dignity include, for instance, discarding human embryos with a genetic “abnormality” such as Down’s syndrome,<sup>6</sup> or euthanasia in the case of a person who is terminally ill,<sup>7</sup> in both cases in order to respect such dignity as they may be deemed to have. But that is to accept that life, itself, is an affront to their dignity and, therefore, that eliminating them does not contravene their dignity, indeed, it is to implement respect for it.

Concepts such as human dignity and quality of life were originally formulated in order to protect human life.<sup>8</sup> They provided a basis for people’s claims that they had a right to be treated in certain ways or to receive certain care or treatment; denial of such treatment would amount to a failure to respect their dignity or to fulfil an obligation to ensure a minimally adequate quality of life. In contemporary society, however, the concepts are often used to the opposite effect: to argue, for example, that a person’s quality of life is so low that it does not merit either protection or the cost of support; or that continuing to live is an affront to the person’s dignity and therefore the person’s life should be ended.<sup>9</sup> The notion of *intrinsic* human dignity cannot be used in this way, however; it requires respect for all humans and for human life as such.

Because of the ambiguity of the concept of respect for human dignity and its potential for misuse, we should not use it as a substitute for the concept of respect for human life, although it can have value when used as a secondary or back-up concept to the latter. What, then, does respect for human life require of us?

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<sup>6</sup>Margaret Somerville, *The Ethical Canary Science, Society and the Human Spirit*, Viking/Penguin Canada; Toronto, 2000, pp. 29-30.

<sup>7</sup>Somerville, *supra*, note 3.

<sup>8</sup>Somerville, *supra*, note 4, p. 167.

<sup>9</sup>Somerville, *supra*, note 3, p. 334.

### *Challenges to Traditional Respect for Life*

In the past, respect for life meant largely respect for the life of each individual (although there were exceptions that allowed life to be taken in justified self-defence or defence of others, when that was necessary in order to save life) and respect for human life in general. Such respect remains essential to the protection of both individuals and society and must be upheld at both the individual and societal level. But the new technoscience challenges even this old concept of respect for life, in new ways.

We are a society that has adopted an intense individualism.<sup>10</sup> In the context of reproduction, that means that people should be free to choose which children they will have and which they will not. Future parent(s) can decide to use technologies such as preimplantation genetic diagnosis (PGD), in which IVF embryos are screened for genetic diseases or abnormalities, or pre-natal screening (including genetic screening) and abortion, to avoid having a child with an unwanted condition.

At an individual level these decisions raise difficult ethical issues. We do not agree on the moral status of the human embryo and, consequently, on the respect owed to it. But, if we regard an embryo as being entitled to respect for its life, what does that require of us as a society? Does an embryo have a claim to be transferred to a woman's uterus? Does the high rate of failure to implant or miscarriage of "defective" embryos offer any justification for allowing them to die? Can we regard a woman's uterus as a life-support treatment for an *in vitro* embryo and, if so, can we ethically justify not offering it such treatment? What message does discarding embryos because of their defective genes send to members of our society who suffer from the same disability? Does choosing an embryo on the basis of its desired or undesired characteristics turn the embryo into a product or thing? How will the symbolic message created by PGD and pre-natal screening – that the parents want only a child of a certain "quality" and

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<sup>10</sup> Francis Fukuyama, *The Great Disruption: Human Nature and the Reconstitution of Social Order*. London: Free Press, 1999.

their love is contingent on that being realized – affect the norm that the very nature of parents’ love for their children is that it is unconditional? The flip-side of the parents’ love being conditional is that the embryo becomes, to use German philosopher Jürgen Habermas’s term, “conditional human life.”<sup>11</sup>

Whether or not we can justify PGD and pre-natal screening at the level of individual decision-making, collectively these decisions are resulting in an outcome that would never be acceptable as public policy. In reality the new genetics is functioning as eugenics, but that fact is not acknowledged. The cumulative impact of individuals’ decisions about reproduction based on preimplantation genetic diagnosis of IVF embryos or prenatal screening of fetuses will be to eliminate certain groups of people – for example, Down’s syndrome children – from our society. And what other groups might we eliminate? Achondroplastic “dwarf” children? Profoundly deaf children or those with a gene for manic-depressive illness? To do so would be to wipe out two special cultures in the first two cases, and some of our most creative and artistic citizens in the latter.

To repeat, an outcome that would be unacceptable as a public policy decision – that is, eliminating certain groups of people – is being implemented through the accumulation of individual choices. It is argued in rebuttal that individual choice regarding the nature of one’s child is not a eugenic decision; that eugenics is only practiced when a choice is made in relation to a group or class of persons and by someone who is not the future parent. But is that not simply sophistry?

At the other end of the life spectrum, radical individualism also encourages the view that how one dies is simply a private matter in which no one else – especially not the state or the law – should interfere, and that people must therefore be free to choose euthanasia or physician-assisted suicide.<sup>12</sup> But how we die does matter to society, and does affect societal values, especially if euthanasia or physician-assisted suicide were involved. Their legalization necessarily requires society’s compliance and their

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<sup>11</sup> Jürgen Habermas, *The Future of Human Nature*, Policy Press; Cambridge (UK), 2003.

<sup>12</sup> Somerville, *supra*, note 3.

implementation physicians' participation.<sup>13</sup> Consequently, how we die cannot be just a private matter, but necessitates a number of public policy decisions that establish the norms and values governing what we may and must not do in the context of death. Moreover, if euthanasia were legalized, the collective effect of the decisions of individuals would again have to be taken into account. And what happens to respect for life when, as has happened in the Netherlands, [DOUGLAS if you want a footnote here it should be Foley and Hendin – you should already have the reference and John Keown –likewise. The footnotes are not attached to my text] for this reason or that, suicide begins to become more common – when it becomes, so to say, institutionalized?

It is rerogenetics, however, on which I want to concentrate here. Reprogenetics has faced us with at least three more unprecedented challenges to respect for human life: What does respect for *in vitro* human embryos, respect for the transmission of human life, and respect for the human germ cell line require? We are the first humans to face these decisions, because we are the first to have the technology that can create the circumstances in which they arise.

#### *a) Respect for human embryos*

What does respect for life require of us in relation to the earliest form or stage of life, human embryos, when they exist outside the body of a woman? We face this question because of two major developments: Since the mid-seventies, we have been creating *in vitro* human embryos, and, in the last three to five years, they have become of great potential therapeutic and commercial value. Human embryos are a source of stem cells that could be very valuable in making therapeutic products to treat horrible diseases.

That raises a host of questions that include: May we create human embryos to use them as the source of therapeutic products and, in doing so, kill them? May we clone human embryos for the same purpose? Does the intention in creating an embryo matter? Is it unethical to transmit human life to an embryo with the intention of using it

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<sup>13</sup> D. Callahan, "When self-determination runs amok", *Hastings Center Report* 1992, 22(2), pp. 52-55.

as a product, but not wrong to do so in order to help a woman to have a child? May we use so-called “spare” embryos “left over” from IVF procedures for therapy or research? Is it unethical to use such embryos as commodities, but not unethical to allow them to die? Or, as some people argue, is it unethical not to use them – that is, to “waste” them? And if we are going to use human embryos, may we set up human embryo manufacturing plants?

The ethical analysis needed to respond to these questions requires, first, an examination of the moral status of the human embryo. There are three current views on this, the practical implications of which range from permissiveness to prohibition:

- The human embryo has no moral status, and is equivalent to any other cell or group of cells. It may be treated as we see fit.
- The human embryo is a potential human life. It has moral status and deserves respect, but not (yet) the same respect as the rest of us. Therefore it may be used in ways that would not be ethically acceptable if applied to the rest of us.
- The human embryo is a human life with potential – like any other life, or life at any other stage. As the earliest stage of human life, the embryo has the same moral status as the rest of us; after all, we are all ex-embryos. Therefore its life must be respected and it must not be used simply as a product or as a means to an end.

A second and related question also needs to be asked. What impact would using human embryos as products have on our sense, both as individuals and as a society, of what it means to be human and of the nature and meaning of human life?

Jürgen Habermas, in his new book, *The Future of Human Nature*, argues that respect for what he calls pre-personal human life is essential to our ethical self-understanding of humanity as a whole; that is, of what it means to be human.<sup>14</sup> There is an incredible arrogance in an approach based on the idea that our view of a life form – the human embryo – determines its status, worth and purpose. Moreover,

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<sup>14</sup> *Supra*, note 9, p. 14.

“[t]o the extent that the creation and destruction of embryos for the purposes of medical research are extended and normalized, the cultural perception of antenatal human life will change, too, blunting our moral sensibility for the limits of cost-benefit analyses in general. Today, we are still sensitive to the obscenity of this reifying practice, and wonder whether we want to live in a society which is ready to swap sensitivity regarding the normative and natural foundations of its existence for the narcissistic indulgence of our own preferences.”<sup>15</sup>

Then, if we can justify using human embryos to benefit the rest of us, can we, at the other end of the lifespan, also justify using unconscious, dying people – “neo-mortals” – for the same purpose? For instance, may we use them as research subjects, or for physicians-in-training to practice medical interventions, or even, by direct analogy to the use of embryos, as organ or tissue donors? Or would that be a failure to respect human life and human dignity? Many people who would allow the use of human embryos would recoil from using dying people in such ways. Does that difference in reaction reflect valid moral intuitions that there is an ethical difference between these two situations? Or is it rather a failure to perceive what is needed to respect human life, and to treat it ethically, when we do not personally identify with it because it does not look like us, which is true of embryos but is not true of dying people?

#### *b) Respect for the transmission of human life*

Another way in which we must now learn to respect human life is with regard to its mode of transmission. Yet again, we are the first humans to have to consider what that requires. In the past, human life could be transmitted only through sexual intercourse. Although, very recently, there have been scientific reports that it will be more difficult to clone humans than sheep using the “Dolly technique” (somatic cell nuclear transfer, SCNT),<sup>16</sup> let us assume that it will become possible. Cloning is asexual replication not sexual reproduction. Human cloning can also be carried out using the cells from *in vitro* human embryos that have not lost their totipotential capacity, which means that each

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<sup>15</sup> Ibid., p. 20.

<sup>16</sup> Margaret Munro, “Humans ‘nearly impossible’ to clone: study”, National Post, April 11, 2003

cell can form a new individual – and all are genetically identical. (This same process can occur naturally, resulting in identical twins or triplets. But that does not mean that intentionally cloning embryos in this way is ethically justified. Different ethical considerations apply when we intentionally intervene. Moreover, the natural cloning process is very limited in the number of embryos that can result, whereas the technoscience-assisted one is not.) What must we not do, if we are to uphold respect for the transmission of human life?

One school of thought would say there is nothing – beyond, one assumes, what our own conscience might indicate as wrong – that we must not do. In the context of reproduction or replication, intense individualism leads to claims of “a right to absolute reproductive freedom;”<sup>17</sup> that is, to claims that decisions about reproduction are no one else’s business (again, especially not the state’s business) and that one should be absolutely free to reproduce in whatever way one wishes. Therefore, the argument goes, cloning should not be banned. One should be able to choose a child with one’s own genes, just as through PGD or pre-natal screening one can choose not to have a child with certain genetic characteristics.

Whatever else may be said in criticism of the “absolute reproductive freedom” approach, it is plainly to adopt an adult-centred reproductive decision-making model. That is an ethical mistake. The model should be a *child-centred* one, especially when there is a conflict between what is best for the future parents and for the future child. For instance, if adults want to clone themselves, their interests in doing so should not prevail over a child’s right not to be created in such a way. The child’s interests must prevail, and those interests include not coming into being as a copy of someone else and not being designed by another. We each have a right to our own unique ticket in the great genetic lottery of the passing on of human life. Cloning contravenes that right. A secondary but nevertheless very important objection to cloning is that it carries very serious risks of disease, disability and a decreased life span for the cloned child.

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<sup>17</sup> J.A. Robertson, “Embryos, Families and Procreative Liberty: The Legal Structures of the New Reproduction.” *Southern California Law Review*, vol. 59 (1986), p. 939.

Habermas comes to the same conclusion using a concept that humans have a right not to be “disposed over” – their very essence or nature interfered with – by other humans. He proposes that the contingency of the origins of each of us as humans is of the essence of being human. We can only truly become ourselves – an authentic person who authors their own life history – if we are free and equal to all others.<sup>18</sup> Both freedom and equality are compromised if we are designed by someone else. Cloning is one form of such designing. Whether we have an absolute right not to have the genetic inheritance we receive altered, is a further question. Certainly, altering it requires very strong justification, a matter to which we will return.

Quite apart from the wrong to the future child involved in cloning, cloning may be deemed a failure of respect for the transmission of human life, since a host of moral objections arise both in the transition from reproduction to replication and in the treatment of embryos as “xeroxable” that is simply products that may be copied. . Moreover, even if not deemed inherently wrong in itself, cloning generates an ethically unacceptable slippery slope. If cloning were allowed, why would it be permissible to clone one embryo, but not ten or even ten thousand? And what about the other technoscience modes of transmission of human life besides cloning: creating an embryo from two ova or two sperm or three or more genetic parents, or even, perhaps, from individual genes? Would they be permissible? Accepting cloning would make it much more difficult to impose defensible limits on any of these technologies. And lest we think that no more ethically challenging, mind-altering science than this is possible, what about the ethics of the rapidly emerging technoscience of “trans-humanism” or “post humanism” – creating bodies that are part human and part machine, or even fully machine and activated by the components of a human brain down-loaded onto a computer chip?<sup>19</sup> Or, perhaps even more controversially, as we have just seen in relation to proposed research in the United States, what about the ethics of creating

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<sup>18</sup> *Supra*, note 9, pp. 25-37.

<sup>19</sup> Rodney Brooks, *Flesh and Machines: How Robots Will Change Us* (Pantheon Books; New York, 2002).

creatures that are part human, part animal?<sup>20</sup>

Surveys show that most Canadians and Americans are opposed to human “reproductive” cloning – making a child identical to an existing person – but less people oppose human “therapeutic” cloning – the creation of human embryos in order to use them as a source of stem cells for making therapeutic products.<sup>21</sup> But this only highlights our current moral confusion. Surely transmitting human life with the primary intention of killing the resulting embryos in order to make therapeutic products for the benefit of others, that is, commodifying them, does *not* fulfill the requirements of respect for the transmission of human life.

### *c) Respect for the human germ cell line*

Yet another question we are the first humans to face: What does respect for the essence of human life, biologically speaking – the human germ cell line, the genes that are passed on from generation to generation – require of us? These genes are the product of 800 million years of evolution. We can now change that evolution in nano-seconds. What must we, may we, and must we not, do? In changing an embryo’s germ cell line, we change not only that embryo, but all of its descendents in like manner. Is it ever acceptable to do that?

Another way to ask the same question is: What does the obligation to hold the human germ cell line in trust for future generations, as the common heritage of humankind, require of us? Does it mean, as many people believe, that we must never intentionally change it, that alteration of the germ cell line is never justified? What if we could eliminate a horrible disease by changing just one gene and we knew it was

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<sup>20</sup> Mouse, to be specific: see Nicholas Wade, “Stem Cell Mixing May Form a Human-mouse Hybrid”, *The New York Times*, November 27, 2002 (online). Even some scientists engaged in genetic research who are not usually regarded as conservative were strongly opposed on ethical grounds. But how clear are these grounds if the cloning barrier is to be crossed?

<sup>21</sup> Ontario Consultants on Religious Tolerance, “Therapeutic Cloning: Ethics, public opinion, legislation” (online April 16, 2003: [www.religioustolerance.org/clo\\_ther1.htm](http://www.religioustolerance.org/clo_ther1.htm)); Center for Genetics and Society, “Analysis: Public Opinion: Summary of Survey Results” (online April 16, 2003: [www.genetics-and-society.org/analysis/opinion/summary.htm](http://www.genetics-and-society.org/analysis/opinion/summary.htm)).

reasonably safe to do that? Do we object to altering the human germ cell line because we believe that it is inherently wrong to do so, that no good purpose can ever be a justification for interfering with it? Or do we believe that some interventions might be justifiable – that it is not inherently wrong to intervene, only that intervening is not presently justifiable because it is too dangerous? Or do we fear that once intervention is allowed, no matter how much suffering we could eliminate through it, we could not control the range of interventions that would then occur, and that many would be frivolous at best, profoundly unacceptable at worst? (An extreme example of the latter would be intentionally to disenchant the intelligence of certain embryos to create a class of people who would be willing to work at the mundane, but necessary, tasks that those whose intelligence had been genetically enhanced would find too boring.)

It is important here to distinguish therapies that involve genetic interventions on somatic cells from germ cell line interventions. Somatic cell genetic therapy only affects the genes of that embryo (or, indeed, any person who is treated with it) not the descendants of that embryo (or person). It can be justified to treat serious disease, provided it has been shown to be reasonably safe and effective, which has not yet been established. On the contrary, genetic therapies that have been used have resulted in very harmful consequences, including death.<sup>22</sup>

What about the justice issues raised by germ cell line alteration? Would only the rich have access to it, widening the socio-economic gap? And what about the myriad of additional ethical problems we would face because of the inevitable commercialization of this technology? Speaking of commercialization, is staking ownership claims on human genes, for instance – as multi-national pharmaceutical companies have done through patents<sup>23</sup> – consistent with our fiduciary obligations in relation to the human germ cell line? Almost certainly, it is not. Many complex questions must be carefully analyzed if we are to act ethically in this area.

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<sup>22</sup> Mike Bygrave, "False dawns in brave world of New Genetics", *The Observer*, Sunday December 22, 2002 (on-line)

<sup>23</sup> For example, Myriad Genetics of Salt Lake City, Utah, have patented the human breast cancer genes BRAC1 and 2, in the United States. See C. Abraham, "Ontario to fight for gene test", *Globe and Mail*, January 7, 2003, A5.

On a broader scale, what are our obligations regarding other living creatures' germ cell lines? May we just alter those as suits us? At the very least, there should be a strong presumption against doing so; that is, a precautionary principle should apply and those who wish to intervene should have a very heavy burden of proof to show that what they propose is fully justified.

### *Religious Voices in the Public Square*

In the past, we used a shared religion to find the shared principles and values on which we based our society, especially those governing the two great events of each human life – birth and death. That is not possible in multi-cultural, multi-religious secular democracies such as we have in North America. But that does not mean that religious or spiritual beliefs should now be excluded from our deliberations. On the contrary, they are an important element of a multi-voiced public discourse, which we are no more justified in excluding than views based on atheism or agnosticism. Moreover, the history of some of the most important values in our secular society have their roots in a religious past, just as our own experience of them may have roots in this or that religious present. To appreciate fully both the richness and the potential of these values they must not be artificially severed from that past or present, pursuant either to a false notion of neutrality or to an artificial political correctness.

A common image used to describe changes in values is that of a pendulum. Some see us as having swung away from values espoused in religion to a fully secular values base. That view is far too simplistic – the reality is much more complex and captured better in the image of a helix, like the DNA spiral with which we are now all so familiar. We have swung to secular values, but as we move forward and, consequently, back over some of our long-standing values, attitudes, beliefs and traditions, we need to draw on the richness of knowledge, wisdom and experience they encapsulate and incorporate that into the values that will guide us into the future.

That does not mean we will use religion directly as a basis for public policy.

That is not acceptable in a secular society, one in which church and state are separate. But neither is it acceptable to exclude the voices of those people whose values are informed by their religious beliefs, as voices among the many that have a right to be heard in the public square. Nowhere have we more to gain and less to lose in recognizing the contribution which the religions have to make, than in charting a course through the unknown territory and unprecedented challenges raised by the new reprognetic technoscience. For those challenges force us to grapple with the essence of human nature, human life, and human values – touching those very things which, over the aeons of human existence, we have used religion to mediate into our consciousness and to communicate about with each other.

### ***Conclusion***

It merits repeated notice that these unprecedented new challenges to respect for human life and, secondarily, for human dignity, are being played out in relation to the youngest and, often, the oldest members of our community – genetics for the very young, euthanasia for the old. Perhaps that is no accident, because we often test our principles, values, attitudes and beliefs at the margins, and here we are doing so at the two margins of life. In deciding what we must, may and must not do, we should remember, however, that the ethical tone of a society is set by how it treats its weakest, neediest, most vulnerable members, not those who are powerful, able, and can protect themselves. What ethical heritage will we hand on to our descendents? Our responses to the ethical issues raised by respect for human life, in the context of the new genetics and euthanasia, will play a major role in deciding that.

*Contribution to Recognizing Religion in a Secular Society*