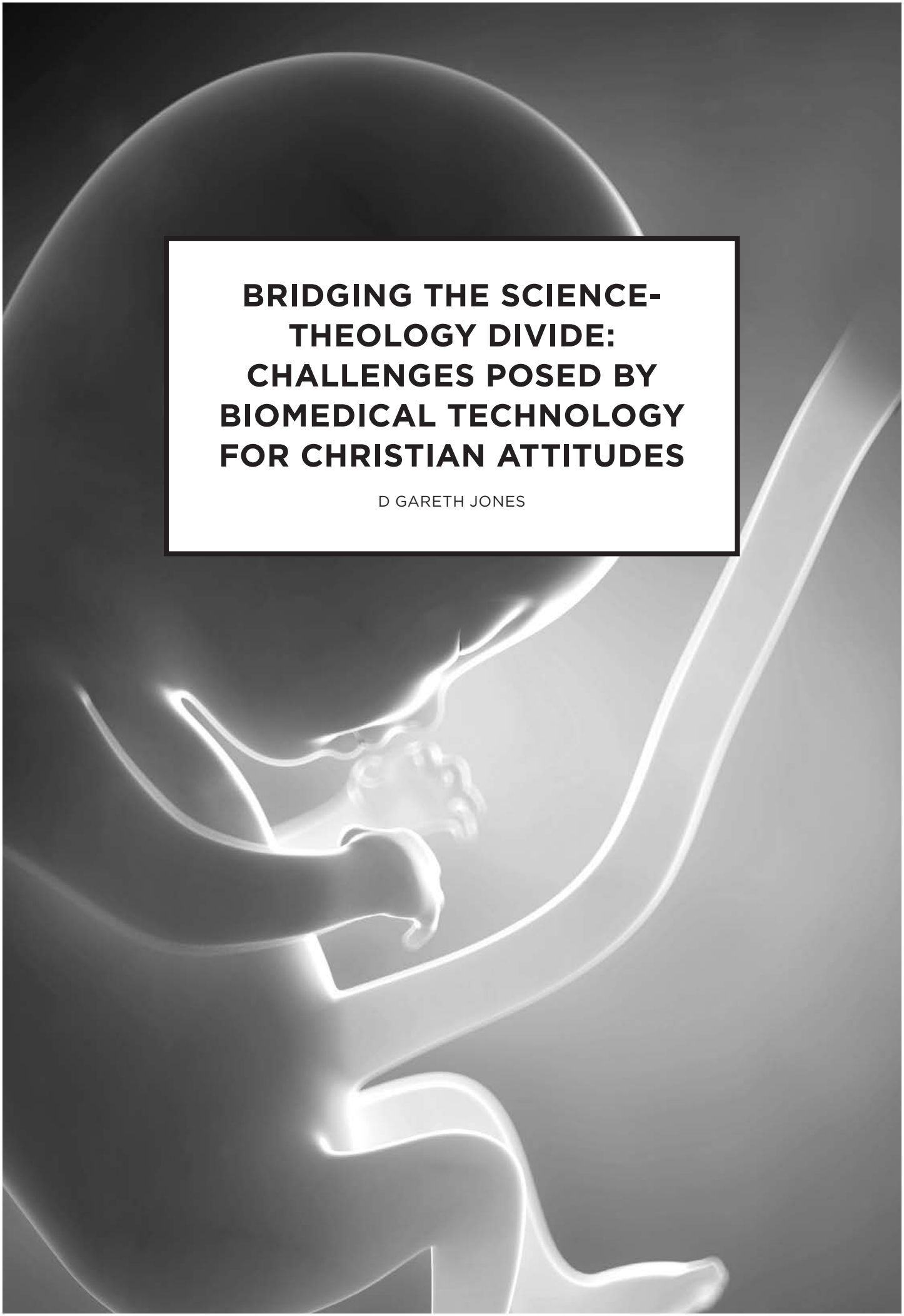

BRIDGING THE SCIENCE-THEOLOGY DIVIDE: CHALLENGES POSED BY BIOMEDICAL TECHNOLOGY FOR CHRISTIAN ATTITUDES

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The interface between science and the Christian Faith is demanding territory as scientists move into theological domains, and theologians touch on scientific matters. Medical topics are particularly sensitive ones, since it is ordinary church members who have to make extraordinarily taxing decisions affecting both themselves and those close to them. How do they respond as the people of God? How do they live as those who long to be committed to Christ and to the teachings of Scripture?

Is there one prescriptive answer to which all people of faith should conform? Some Christian groups consider there is, and so church denominations formulate responses to, for instance, the various artificial reproductive technologies (ARTs)[1] in very categorical (often negative) language, as though they definitely know the mind of God. However, these resolutions may disappear after a time or even be overturned by subsequent votes of the same church body.[2] And how useful are they in real-life situations?

How certain can any of us be about what is acceptable or unacceptable from a Christian standpoint when a couple is confronted by the decision to have another child when their first one has a genetic condition like cystic fibrosis or osteogenesis imperfecta?[3] Do they decide not to have another child of their own, do they take a chance and have a child, or do they use pre-implantation genetic diagnosis (PGD)[4] to ensure that the child that is born will not have one of these conditions? Or what should a couple do when the fetus is found to have very major heart abnormalities on a routine scan during pregnancy? Do they continue with the pregnancy, and if so do they opt at birth for palliative treatment knowing that the baby will die within a few days, or do they decide in favour of major repeat surgeries in the expectation that the child may live for 4 or 5 years? Assuming that couples such as these are committed Christians, what directions should they be provided with that will assist them in the onerous task of making Christ-glorifying decisions? Do we consider that they should be provided with a definitive map that will point them in a certain direction (call it AA) rather than in an alternative direction (call it BB), and what is it within Christian thinking that provides this unequivocal guidance? Even if a clear answer can be given to this question, should every couple be pointed in this direction, regardless of their circumstances, maturity as Christians, or level of support from their Church and local community? I have considerable doubts that there are maps that will provide a fail-safe route to a decision on which all those of faith should agree on the basis of Scripture.

Reflections along these lines have been prompted by the review of my book *The Peril and Promise of Medical Technology* that appeared in this journal in July 2014.[5] In the review it was asserted that my statement that there are "no definitive answers that will provide lasting guidance or assured answers" (p ix in the book) will "cause dismay among those who hold to firm convictions about what is acceptable and what is unacceptable from a Christian standpoint in relation to developments in medical technology."[6] On this basis the reviewer contended that my approach is "much closer to the fluid 'Situation Ethics' of Joseph Fletcher, with its flexible, case by case approach, than it is to a straightjacket of absolute rules."[7] The reviewer did not think that I had given sufficient attention to principles that emanate from Scripture. It was within this context that he would have liked "a map to guide [people] through the complexities of modern medical decision making."[8] More generally, he would have liked arguments persuasive to those not sharing the basic presuppositions of the religious minority.

I am a biomedical scientist who operates with a worldview governed by my stance as a Christian. It is within this context that I accept there is considerable ambiguity; there are many grey areas and there is

1 Artificial reproductive technologies (ARTs) encompass procedures such as *in vitro* fertilization (IVF), intracytoplasmic sperm injection (ICSI), and preimplantation genetic diagnosis (PGD; see below). These include the *in vitro* handling of human oocytes (eggs) and sperm or embryos (in a laboratory) with a view to overcoming infertility. They may involve freezing of the sperm, oocytes or embryos. If the number of embryos produced exceeds the number required for producing a family spare (surplus) embryos will result. Surrogacy is sometimes used in association with IVF.

2 For example, the 1996 report of the Church of Scotland on embryo research opposed all embryo research. This was reversed 10 years later with guarded support for this research. Both reports were well argued. See Board of Social Responsibility, *Pre-conceived ideas, Report of the Board of Social Responsibility on Embryology, Church of Scotland* (Edinburgh, St Andrew Press, 1997). Also, Church of Scotland, *Report of the Working Group on Embryo Research, Human Stem Cells and Cloned Embryos* (2006), Available at http://www.srtp.org.uk/cloning.shtml.

3 Ellen Painter Dollar, *No Easy Choice: A Story of Disability, Parenthood, and Faith in an Age of Advanced Reproduction* (Louisville, Kentucky Westminster John Knox Press, 2012). Osteogenesis imperfecta (OI) is a genetic disorder in which bones break very easily. The different forms are characterized by different degrees of severity; in some instances, an affected individual may have several hundred fractures in their lifetime.

4 PGD is used in conjunction with IVF and usually involves the genetic examination of artificially-fertilized embryos to select an embryo that does not have the gene responsible for the condition in question. An unaffected embryo is transferred to the woman's uterus for implantation with the aim of producing a child/individual free of the genetic disease in question; affected embryos are discarded.

5 J. Keir Howard, 'Review of The Perils and Promise of Medical Technology,' Stimulus 21/2 (2014): 53–54.

6 Ibid., 53.

7 Ibid.

8 Ibid., 54.

much none of us (in my view) understands. It is this acceptance of ambiguity that has repeatedly upset my critics from within the Christian community, some of whom – like the reviewer – regard my position as being vague and therefore unhelpful. I can see exactly where they are coming from, and I sympathize with them, but I do not consider that in some of these highly complex areas there are always black and white responses arising from one's commitment to Christ.

This is not vagueness on central doctrinal issues. It is not vagueness on first-order ethical values like justice and love, which I regard as absolute, unconditional and unequivocal and that cover all human situations.[9] Neither do I question second-order principles, such as: doing good and not doing harm, respecting people rather than using them, respecting the autonomy of people, preserving life, telling the truth, seeking not to harm innocent people, ensuring that a professional relationship is never exploitative. Any attempt to apply these values enshrines moral ambiguity. Even those who wish to preserve human life at all costs will at times not be able to do so or their efforts will come up against the best interests of others. As we do our best for others we realize how limited and imperfect we are. As I have written elsewhere, "Christians do their best to please [God] and do their utmost for fellow human beings, and they seek Christ's direction for all their efforts. But infallibility will always elude us, and humility is to be our greatest virtue."[10] John Stott, when he appeared to be despairing of the behaviour of some within the Church, describes them as "a disheveled rabble of sinful, fallible, bickering, squabbling, stupid, shallow Christians, who constantly fall short of God's ideal, and often fail even to approximate to it."[11] It is within this framework that bioethical decision-making takes place, even within Christian circles.

INFALLIBILITY WILL ALWAYS ELUDE US, AND HUMILITY IS TO BE OUR GREATEST VIRTUE

TAKING TECHNOLOGY SERIOUSLY BUT ALSO CRITIQUING IT

Even though I am a scientist committed to much that science has to offer, I am not a promoter of everything brought about by the purveyors of the latest technological wizardry, whether in medicine or anywhere else. Nevertheless, I take seriously possibilities opened up by technology, hence the title of my book with its reference to the 'peril' and 'promise' of medical technology in the title. It was no accident that peril preceded promise, since I am only too conscious of the false expectations, excessive hyping and undue reliance upon technology that frequently take place. But by the same token I am ready to applaud the instances where technology has improved the quality of people's lives in ways that Christians as much as others will appreciate and for which they will be deeply grateful. The challenge is to attain a balance between the two, a task that has especial resonance for Christians as they seek to be faithful to God and as they aim to follow in the footsteps of Jesus.

As a medical scientist I am deeply conscious of the side effects of drugs, of the limitations of surgical interventions, and of the unwarranted hype that so often accompanies spectacular new 'breakthroughs.' I have never expressed the slightest support for technological imperialism; indeed, I am a stringent critic of anything with a tinge of transhumanism[12] and its anti-Christian vistas and secular ideologies. The bioethical literature is awash with discussions of radical cyborgian futures, the creation of post-persons, the elimination of all pathologies, all of which will allegedly be the outcome of technological innovation.[13] By the same token I support the general directions of regenerative medicine,[14] even though some Christian writers oppose it on the ground that it will lead to a radical redesign of human nature and as such is rich with Promethean promises.[15] Similar concerns are being expressed about artificial intelligence (AI) and its potential threat to the future of the human race.[16] The trouble here is that the distinction between

9 D. Gareth Jones, *Valuing People: Human Value in a World of Medical Technology* (London, Paternoster Press, 1999), 39.

10 Ibid., 40.

11 John Stott and Timothy Dudley-Smith, *Authentic Christianity* (Nottingham, IVP, 1995), number 719.

12 Transhumanism is a movement that aims to transform the human condition through biomedical technologies that will, it is claimed, overcome human moral and ethical limitations by enhancing intellectual, physical and moral capacities. When human illnesses and ultimately death have been overcome, the resulting individuals will take on the form of post-humans.

13 See chapter 8 of D. Gareth Jones, *The Peril and Promise of Medical Technology* (Peter Lang, Oxford, 2013), 209–228.

14 Regenerative medicine revolves around the potential of stem cells to repair damaged tissues and organs, and in this way contribute to the treatment of numerous diseases, including diabetes and spinal cord injury, and neural diseases like Parkinson's and Alzheimer's. However, it is also associated with highly speculative vistas according to which it has the potential to redesign human nature.

15 King-Tak Ip, ed. *The Bioethics of Regenerative Medicine* (Netherlands, Springer, 2009), 3–10.

16 See for example, Rory Cellan-Jones, 'Stephen Hawking warns artificial intelligence could end mankind,' *BBC New Technology*, 2 December 2014, http://www.bbc.com.news/technology-30290540 (accessed 12 December 2014).

realistic scientific and clinical vistas on the one hand, and unrealistic hype on the other, has disappeared. The ability to grow new organs and tissues in the laboratory with the prospect of changing the course of certain chronic diseases is far removed from the idealistic notion that all disease is about to be conquered and that human life as we know it is about to be turned upside down. Similar comments apply to AI, which for the foreseeable future is highly unlikely to be capable of redesigning itself, although this will continue to be a topic of enormous interest and concern for scientists as well as theologians.

Some Christians have bought in to these troubling scenarios and quite correctly reject the extremes. The concern is that regenerative medicine and similar techniques "foster cultural denial of human finitude and mortality or symbolize a preempting of the decisive divine transformation of their bodies that is central to the Christian hope for resurrection."[17] I agree with this conclusion, and I am just as concerned about secular flights of imagination that are outlandishly grandiose, that ignore Christian constraints, and that are based on an exceedingly flimsy (non-existent) scientific base. But I do not agree that Christians should be using these claims as a basis for rejecting a welter of technologically based exciting clinical prospects. There is no theological justification for buying into hype and science-fiction type thinking, neither does faithfulness to the Christian gospel demand this. It is in this sense that I am optimistic, but my optimism is far from being unalloyed.

Andrew Goddard rightly stresses the non-messianic character of all technological initiatives. For him techniques should not become "idols around which we create an alternative salvation-history and drama of redemption to that revealed in Scripture."[18] Biomedical technologists should never assume the aura of saviour, since the powers they possess will always let us down if we place too much reliance on them. However, this does not lead to the rejection of all technological endeavours. In practice none of us does this, and yet Christian writers on occasion wax eloquent against technology on the ground that some procedures are regarded as misleading. As with analyses of regenerative medicine, the task is to distinguish clearly between technological approaches to be welcomed as Christians, and those that should be shunned by Christians. This is where the contributions of scientists, with understanding of the science, should be accepted as equal partners in the necessary dialogue that needs to take place.

Ian Barns has argued that human mortality cannot be transcended through technology.[19] In his words, "the project of transcendence through technology is unsustainable and a destructive folly . . . human life needs to be lived gladly within the limits and diverse possibilities of our existing material condition".[20] We are not to aim to project human power and control, but faithfully trust God and become suffering servants. This is very relevant in the biomedical area, since the influence of Jesus was felt in his acts of healing, exorcism and control over nature, and therefore the model he espoused serves as the source of freedom from the crippling effects of disease, ignorance and spiritual darkness. In other words, even though we have to be cautious in the face of technological excesses, we also have to take seriously the contribution of science and technology to Christian imperatives.

THE TASK IS TO DISTINGUISH CLEARLY BETWEEN TECHNOLOGICAL APPROACHES TO BE WELCOMED AS CHRISTIANS, AND THOSE THAT SHOULD BE SHUNNED

THEOLOGICAL FRAMEWORK

As a scientist I have to rely upon the insights of theologians and in particular those of theological ethicists. The ones to whom I look to most are Allen Verhey (who died in February 2014) and Neil Messer. Both have written in depth on biomedical and related ethical issues. Verhey's ideas are clearly expressed in books such as: *Reading the Bible in the Strange World of Medicine*; *Remembering Jesus: Christian Community, Scripture and the Moral Life*; *The Christian Art of Dying: Learning from Jesus*; and in an article 'What makes Christian bioethics Christian? Bible, story and communal discernment'.[21] Messer's contributions are found in

17 Robert Song, 'Genetic manipulation and the resurrection body,' In Ip, *The Bioethics of Regenerative Medicine*, 43.

18 Andrew Goddard, 'The Place of the Bible in medical ethics,' in D. Gareth Jones and R. John Elford, eds, *A Glass Darkly: Medicine and Theology in Further Dialogue* (Bern, Peter Lang, 2010), 133–56, p 154.

19 Ian Barns, 'Debating the theological implications of new technologies,' *Theology and Science* 3/2 (2005): 179–96.

20 Barns, 'Debating the theological implications of new technologies', 191.

21 Allen Verhey, *Reading the Bible in the Strange World of Medicine* (Grand Rapids, MI, Eerdmans Publishing, 2003); *Remembering Jesus: Christian Community, Scripture and the Moral Life* (Grand Rapids, MI, Eerdmans Publishing, 2002); *The Christian Art of Dying: Learning from Jesus* (Grand Rapids, MI, Eerdmans Publishing, 2011); and in an article "What makes Christian bioethics Christian? Bible, story and communal discernment," *Christian Bioethics* 11/3 (2005): 297–315.

Respecting Life: Theology and Bioethics; *Flourishing: Health, Disease, and Bioethics in Theological Perspective;* also the article: "Christian engagement with public bioethics in Britain: The case of human admixed embryos."[22] Both are theologians who have sought to engage intimately with the realities of clinical and scientific evidence against a background of commitment to Scripture. Neither provides easy-to-follow ethical maps, since in their view these would be inappropriate and misleading; to long for such maps is to long for the wrong sort of guidance for people of faith.

In approaching ethical dilemmas, Verhey looks to Scripture but Scripture is always to be read humbly. No single individual or even scholar has all the answers on a host of bioethical quandaries, no matter to which Christian tradition they claim allegiance, nor how definitive their forebears in the faith may have been, nor how categorical their church hierarchies may be today. Not one of these has assured answers on every minute point raised by current bioethical debate. This is neither a call for vagueness nor for a situation ethics approach (see below). It is simply being prepared to acknowledge that decision-making on many bioethical issues moves into far less definitive territory than that suggested by the pro-life/pro-choice distinction. Such a distinction is only helpful in so far as all issues are amenable to "yes" or "no", "right" or "wrong" responses. If all ethical decision-making were this clear-cut, there would be little in the way of ethical debate. This dual distinction contrasts the two extremes, whereas in so many ethical conflicts one is searching for a path that is somewhere between the extremes. Is not this how Paul approached the eating of food offered to idols? Was it always right or always wrong? Apparently not. Pro-eating or pro-abstaining would have divided the Christians in these communities into two irreconcilable camps, but this is not what Paul advised (1 Corinthians 8: 1–13).

In light of this, Christians are to avoid any hint of the arrogance that suggests that they know unerringly that their interpretation is the correct one, when faced by demanding ethical dilemmas where those within the Christian community reach different conclusions. Christians are to take seriously the context provided by the Christian community in which together they strive to interpret Scripture in faithful ways, even when there are divergences of opinion on complex matters. The situations in which people find themselves are also to be viewed with deep seriousness, not in order to diminish Scriptural input but to ensure that it supports people in their need. For instance, while there are valuable theological insights in Psalm 139: 1–18, enormous care has to be exercised in arguing that what the psalmist wrote in that context can be generalized to apply to every embryo and fetus. While some will argue that this is a valid interpretation of this passage, others within the Christian community demur. However, there is agreement that prenatal life is never to be treated lightly. The broad swathe of agreement within the Christian community is far more significant than the disagreements over details. Unfortunately, it is the latter to which attention is repeatedly drawn, and which divide and frustrate dialogue within the Christian community.

CHRISTIANS ARE TO AVOID ANY HINT OF THE ARROGANCE THAT SUGGESTS THAT THEY KNOW UNERRINGLY THAT THEIR INTERPRETATION IS THE CORRECT ONE

But who provides input into the bioethical debates required to form a Christian perspective? Is it only biblical scholars and theologians? Do they alone constitute the one source of wisdom and advice? For Verhey these by themselves are not competent to determine a Christian response; reference to the wider Christian community is essential, with input from scientists, clinicians, lawyers, counsellors, and ordinary committed Christians (female as well as male).[23] All are crucial contributing members of the community of faith; scientists and clinicians need theological scholars, but the latter also need scientists, clinicians and many others. The reason is that ethical direction will not be found in Scripture alone, important as Scripture is in forming the basis of a Christian response.

What constitutes this basis? In considering what he describes as the strange world of sickness in Scripture, Verhey argues that our remembering Jesus and his attitudes will dispose us towards a number of crucial attitudes of our own: respect for the embodied integrity of people, for their freedom and identity, the need to nurture community, and to support and care for – and if feasible – cure the sick.[24] On the other hand, he also stresses that our powers are limited and far from being messianic.

22 Neil Messer, *Respecting Life: Theology and Bioethics* (London, SCM Press, 2011); *Flourishing: Health, Disease, and Bioethics in Theological Perspective* (Grand Rapids, MI, Eerdmans Publishing, 2013); also the article: 'Christian engagement with public bioethics in Britain: The case of human admixed embryos,' *Christian Bioethics* 15/1 (2009): 31–53.

23 See Verhey's 'rules' in Reading *the Bible and Remembering Jesus*.

24 Verhey, 'What Makes Christian Bioethics Christian?', 308.

Hence we are not to have extravagant expectations of any human power, including medical powers, and these are never to be idolatrous.[25] Herein lies a crucial balance: a midpoint between realistic expectation regarding what technology can achieve and over-expectation that it will solve all humanity's problems. This balance pinpoints the boundary that Christians will always seek to draw between temporal and eschatological hope.

This counterbalance emanates from the "not yet" character of our life and also of medicine. Consequently, there is uncertainty in this realm, and with uncertainty comes moral ambiguity as good ends come into conflict not only with evil ends but with different sets of good ends. From Verhey's perspective, "The memory of Jesus does not provide any neat and easy resolution to such conflict. It does not usher in a new heaven and a new earth, either. Here and now there is ambiguity".[26] This is the realism inherent within any serious Christian appraisal of bioethical dilemmas. Neat solutions are enticing (A is always correct; B is always incorrect), but when the value and aspirations of one sick individual are pitted against the value and aspirations of another individual, difficult choices follow.

WE ARE NOT TO HAVE EXTRAVAGANT EXPECTATIONS OF ANY HUMAN POWER, INCLUDING MEDICAL POWERS, AND THESE ARE NEVER TO BE IDOLATROUS

For some these approaches will fail since they do not provide a clear map that will indicate which actions are right and which are wrong, which express the ways of the righteous and which the ways of the wicked (Psalm 1: 4–6). Such a map would be expected to provide precise answers to precise ethical queries at the interface between science and ethics. For me and for the writers I have quoted, this is unhelpful. While it is possible to draw up such a map or maps, they would have to be exceedingly detailed, outlining what actions are to be taken in very precise situations. One can imagine that a protectionist map would include such as the following: no embryos should ever be destroyed; no fetuses should ever be aborted; every attempt should always be made to ensure that a 22- or 23-week premature infant is saved; no genetic analyses should be carried out on embryos when a genetically based condition has been detected in an existing child in the family; no one in a persistent vegetative state (PVS)[27] should be denied ongoing nutrition and hydration. These are merely suggestions, but their thrust accords with much in the extant literature. Even expressed like this, they point to their arbitrary nature since, in isolation of other considerations, they do not provide a requisite theological framework within which to make difficult ethical judgements in real life situations.

Neil Messer has sought to unpack Verhey's general directions with a series of what he describes as diagnostic questions.[28] Is the project good news to the poor, the powerless, those who are oppressed or marginalized in any way? Is it a way of acting that conforms to the *imago Dei*, or is it an attempt to be "like God"? What attitude does it manifest towards the material world (including our own bodies)? What attitude does it manifest towards past human failures?[29] What attitude does the project embody towards our neighbours?'.[30] For him, this is a central theme in Christian ethics, and he seeks to apply love of neighbour to a wide variety of groups, including embryos.

All these in their various ways are attempting to work within the context provided by the biblical material, and especially by the ministry of Jesus. Just as importantly, they recognize the role members of the Christian community in the twenty first century have to play in interpreting them as they address issues facing them in laboratories, hospital wards, fertility clinics, and the spheres of governmental policy making.

We are also reminded to look beneath the surface of self-assured pronouncements and assess whether they adhere to guidelines such as these. It is this adherence that is the lynchpin of a Christian response, rather than agreement over specific positions, which for all their clarity may or may not represent a faithful outworking of theological principles like these. It is within this context

25 Verhey, 'What Makes Christian Bioethics Christian?', 311–12.

26 Verhey, 'What Makes Christian Bioethics Christian?', 313.

27 Persistent vegetative state (PVS) signifies the absence of responsiveness and awareness due to major damage to the higher centres of the brain, a condition that can continue for many months or years. Since the brainstem is still intact autonomic and motor reflexes and sleep-wake cycles persist. The patient is unresponsive with no apparent awareness of self or the environment, and is maintained by artificial hydration and nutrition.

28 Messer, 'Christian Engagement with public bioethics in Britain: The case of human admixed embryos', *Christian Bioethics* 15/1 (2009): 31–53.

29 Messer, 'Christian Engagement with public bioethics in Britain', 41–3.

30 Neil Messer, *Respecting Life: Theology and Bioethics* (London: SCM Press, 2011), 40.

that I state that there is very often no definitive guidance when faced by complex and on occasion imponderable situations. It is not that we throw up our arms in despair, but that we seek the way of Jesus for our situation and measured against all his teachings and actions in Scripture.

My basic presupposition is that there is guidance to be found in the Bible, guidance that will assist those who wish to act as Christ's followers in the contentious and highly problematic world of modern medicine. By its nature any biblical guidance is at a general level. This is not intended to devalue it. What it does is leave a great deal to the judgement and discernment of individuals and communities, but this is what we should expect for those who have been redeemed by Christ and walk by the power of the Holy Spirit. It also throws the onus onto church communities to act as supportive communities for those in their midst. This is not the world of rules and regulations, even though themes and directions are to be searched for in Scripture as they are in every other area of life.

BY ITS NATURE ANY BIBLICAL GUIDANCE IS AT A GENERAL LEVEL

SITUATION ETHICS

It is easy to dismiss these approaches as having a good deal in common with the situation ethics made popular in 1966 by Joseph Fletcher,[31] as though this is the only alternative to a rules based approach. There is considerable middle ground, much of which in my estimation is far more helpful than either of these extremes. For Fletcher the central driving force of situation ethics is love. For him people were to be placed before principles in decision-making, since the roots of his system were based in existentialism, and the freedom and autonomy of the individual. Hence, according to him, the rightness of actions is judged in relation to the situation in which the actions take place. In determining whether an action is right, it is important to discover the intention of the doer and the extent to which the consequences will be loving.[32] Situation ethics fails to define what constitutes a situation or at what point the final calculation of consequences takes place. It is a form of consequentialism that pays no attention to the nature of the act or what moral significance it may have. Fletcher placed far too much store by the goodness of humans and their ability to do good rather than evil. If this approach were to be adopted today it would see no possible drawbacks in biomedical technology nor in the extent to which technological procedures are to be employed.

The approach adopted by theological ethicists such as Verhey and Messer has nothing in common with situation ethics of this ilk. The only point of contact is in taking account of the situation in which people find themselves when facing major ethical decisions. But this tells us nothing more than that human beings live in community and exist in particular family and social contexts. We are not inanimate mechanisms governed solely by inflexible mechanical rules. We are human beings who relate to God and each other, created in the image of a triune God. If we wish to give a name to this approach I would opt for "context ethics", in order to emphasize the place of context and to delineate it from situation ethics. It also points to the simple observation that no two contexts are ever identical. Consequently, two Christian families facing similar situations may respond in somewhat different ways and both be faithful in their Christian walk.

The trouble with going back to situation ethics is that it is retreating to a theological conflict of a by-gone era. The conflict today is with far more secular ways of thinking than anything envisaged by Joseph Fletcher. Consider the calls for moral bioenhancement[33] – that is, enhancing people using forms of technology.

MORAL BIOENHANCEMENT

Writers advocating this approach come from the school of radical utilitarian secular ethicists, who look to technology alone to solve human problems and provide direction in complex bioethical situations. Human beings are regarded as nothing but physical entities dependent upon the horizons opened up by technologies that it is hoped will eradicate all disease, ageing and even death. Its ethical decision-making is governed by the omnipresence of considerations regarding the physical and cognitive quality of a life. There is no room for any religious contribution of any description. The only hope for overcoming life's challenges lies in scientific resolution. If science fails, so will mankind.

31 Joseph Fletcher, *Situation Ethics: The New Morality* (Philadelphia, 1966).

32 E. David Cook, 'Situation ethics,' In David J Atkinson and David H Field, Eds. *New Dictionary of Christian Ethics and Pastoral Theology* (Leicester, Inter-Varsity Press, 1995), 794–795.

33 Moral bioenhancement seeks to improve people's moral attitudes and aspirations using technology to adjust the brain, converting moral education into a neurobiological endeavour. The means suggested include the use of drugs to increase the levels of chemicals in the brain, such as serotonin and oxytocin, that it is claimed increase cooperation and trust. The reasons put forward for moving in this technologically-based direction is that the usual methods of moral education are no longer adequate to cope with the major technological resources at mankind's disposal for destroying the planet.

General ethical approaches do not inevitably lead to these end-points, and care has to be taken that one does not exaggerate, since pluralist societies are made up of those with a plethora of ethical approaches, only some of which are intransigently secular. Nevertheless, this is the world within which we live. The emphases of writers like Verhey and Messer stand in very sharp contrast to those of secular priests like Julian Savulescu, John Harris and Peter Singer. The Christian emphases of Verhey and Messer are unmistakable as they see life as a gift, as they emphasize the centrality of human community, and the significance of all life – the aged and frail as well as the young and powerful, the postnatal alongside the prenatal, the disadvantaged and advantaged, the unhealthy together with the healthy. We have duties to dependent others, regardless of their quality of life or their lack of potential. While some Christians will want to be far more specific than this, the major drivers here are worlds removed from the scientifically driven ethos of those for whom quality of existence dominates all other considerations. They also make it possible to compare the value systems underlying the contrasting worldviews.

Moral bioenhancement is an inevitable outworking of secular utilitarianism. According to this it is possible to improve people's moral attitudes and aspirations using technology to adjust the brain. Over 80 years ago this was envisaged by Aldous Huxley in *Brave New World*,[34] in which he foresaw a society in which people would carry around their morality in the form of tablets in a bottle. He pictured use of this drug as a norm within society (although he also saw its pitfalls) not unlike the contemporary bioethicist, Julian Savulescu, who argue that if moral bioenhancements turn out to be safe, their use should be made compulsory.[35]

The enhancement literature is plagued by confusion about the definition of the term and how it relates to ordinary treatment (therapy). There appears to be a continuum from unambiguous therapy (removing an appendix that has ruptured) at the one end, to unambiguous enhancement (curing death and creating posthumans who will live for a few hundred years) at the other. Somewhere between these extremes there is the "enhancement" of healthy people by the use of vaccines as prophylactics and a wide variety of drugs to improve people's memories or enable them to run faster than would otherwise be possible.[36]

And there is the dubious use by university students of drugs originally designed to treat a medical condition, including Ritalin and Modafinil. In each case the brains of individuals are being modified at the neuronal level. And yet we do this repeatedly when treating patients with sedatives, antidepressants, and antipsychotics. The difference is that drugs aimed at enhancement seek to lift people to a new level of performance by modifying their brains even when other avenues are available. These examples demonstrate how careful one has to be in dissecting the place of any Christian input. Some of these technological ventures are acceptable to most if not all Christians, such as vaccines, antidepressants or antipsychotics. But what about attempting to live forever in a technologically enhanced state (whatever that may mean) in a fallen world?

Reading much of the enhancement literature gives the impression that all enhancement procedures will work safely and as predicted. Why then not use them to convert immoral individuals into morally responsible ones, and criminals into model citizens?[37] Why not compel parents to enhance the cognitive abilities of their children?[38] Unfortunately some of the cognitive enhancing drugs, such as modafinil, are addictive, since the mechanisms in the brain for learning and memory are closely connected with those implicated in addictive behaviour.[39] This is where the science has to be taken into account in any theological assessment. Similar comments apply to the assessment of the role of chemicals such as serotonin and oxytocin, both of which are implicated in moral judgement and in the expression of emotions such as empathy, guilt and pity.[40]

Why then do some contend so vociferously that we should move in a technological direction? Some writers despair that the usual methods of moral

34 A. Huxley, *Brave New World* (Harmonsdsworth, Penguin Books, 1932; 1958 reprint).

35 I. Persson and J. Savulescu, 'The perils of cognitive enhancement and the urgent imperative to enhance the moral character of humanity,' *Journal of Applied Philosophy*, 25/3 (2008): 162–177, 174.

36 D. G. Jones, 'Enhancement: Are ethicists excessively influenced by baseless speculations?' *Medical Humanities*, 32 (2006): 77–81.

37 J. Tomkins, *Better People or Enhanced Humans?* (UK, Sunnyside Books, 2013) www.humanenhancement.org.uk

38 J. Savulescu, T. Douglas, and I. Persson, 'Autonomy and the ethics of behavioural modification,' in A. Akabayashi, ed. *The Future of Bioethics: International Dialogues* (Oxford: Oxford University Press, 2014) 91–112.

39 M. J. Crockett, L. Clark, M. D. Hauser and T. W. Robbins, 'Serotonin selectively influences moral judgment and behavior through effects on harm aversion.' *Proceedings of the National Academy of Sciences* 107 (2010): 17433–17438.

40 R. J. Blair 'The amygdala and ventromedial pre-frontal cortex in morality and psychopathy.' *Trends in Cognitive Science*11 (2007): 387–392.

education are inadequate to cope with the destructive resources at mankind's disposal of wiping out life on earth.[41] Hence, the only remedy, it is contended, is to employ genetic and other biological means of improving moral awareness and elevate people's responses to the plight of the global poor.[42] This is the end point of a totally secular worldview. One has to question whether the mere ability to alter emotions like sympathy, psychologically or even biologically, will increase moral commitment to a quality of life that, in Christian terms, incorporates living for one's neighbour, for the deprived and downtrodden, and for those unable to help themselves?

The central issue is the extent to which morality is nothing other than a neurobiological phenomenon. For some the only way in which people can be made more altruistic and just is by changing the way in which their brains operate. It is extremely difficult to understand how this idealistic situation could ever be achieved via technology alone, quite apart from the seriously flawed means currently and even potentially available. It would require a high level of moral awareness by the "haves" to ensure that the 'have not's are not to be exploited, and how will this moral awareness be attained? To argue that criminals will be prevented from acting out their criminality, demands morally enhanced people to determine the scope of criminality (and where are these to come from?). While realistic neuroscientific evidence is indispensable for meaningful bioethical analysis, so is a realistic assessment of how ethical requirements will be implemented.

This debate is instructive because it highlights the parameters of how Christians can contribute to the interface between theological perspectives and aspirations based upon technological ability. This is not an either-or choice. Christians are the first to welcome enhancement in education, diet, and a range of health services. They also accept intrusions into the human body: vaccines, surgery, and drugs, some of which operate on the brain, and all of which have technological overtones. Christians have shown no indication that they are anti-enhancement. Why then not aim to morally enhance an individual or even a whole population technologically?

Technologies like vaccines and surgery aim to improve life as we know it for whole societies and not just for a few privileged individuals. Utilization of these technologies accepts people as they are, and does not attempt to transform them into something radically different. There are acknowledged constraints no matter how powerful the technologies may be, and there is acceptance that people can learn from the experience of sickness and injury.[43] Healing within a Christian context entails openness to the healing of the whole person that God alone can bring.

In contrast, the attempt to transform people mechanistically is a manifestation of a quasi-religious faith that scientific knowledge is the only legitimate form of knowledge. The message of moral bioenhancement is that everything about human life including moral behaviour is confined to the physical.[44] It is the all-encompassing explanatory powers bestowed upon these mechanisms that is the problem, not that brain-based mechanisms are implicated in moral actions and attitudes. The realism of a religious approach takes account of this basis and incorporates it into a broader relational perspective. For instance, the apostle Paul encountered numerous difficulties and much strife in radically transforming his priorities and attitudes (Romans 7: 14–25). For him the only way out of his predicament lay in the power and direction provided by the risen Christ, a direction that is just as pertinent today as it was in his day.

THE HOPE OF THE GOSPEL… LOOKS TO THE FULFILMENT OF GOD'S PURPOSES IN THE RENEWAL OF ALL THINGS – OUR BODIES AND RELATIONSHIPS INCLUDED.

Attempts to "inject" morality into an individual are flawed since moral behaviour develops and matures with time, as struggles are overcome and tensions are resolved (and brain circuits and neural connections are modified). The wise individual has thought long and hard about ways of resolving moral predicaments, about means of approaching moral quandaries, and has learned from mistakes. Instantaneous answers have no part to play in establishing a moral repertoire, which for those working within a Christian framework will rely heavily upon the Christian Scriptures and the writings of Christian scholars through the ages.

41 I. Persson and J. Savulescu 'Getting moral enhancement right: The desirability of moral bioenhancement.' *Bioethics* 27/3 (2013): 124–131, 124.

42 J. Savulescu 'Genetic interventions and the ethics of enhancement of human beings.' In Bonnie Steinbock, ed. *The Oxford Handbook of Bioethics* (Oxford: Oxford University Press, 2007), p 517.

43 Tomkins, *Better People or Enhanced Humans*?

44 D. Gareth Jones 'Moral enhancement as a technological imperative.' *Perspectives on Science and Christian Faith* 65 (2013): 187–195.

The Christian imperative to love one's neighbour, and especially the weak and poor, points to the need to assess enhancements in relation to the manner in which they will benefit as many people as possible and not just those with power and money, an element strikingly absent from much of the current ethical debate. If moral enhancements are to benefit as many as possible, it is strange to hear calls for them to be made obligatory, since these reflect the powerful dominating the powerless. If freedom of choice has disappeared there is no freedom at all. Not only has informed consent been sacrificed to a technological imperative, but so have autonomy, beneficence, and justice.

The answer, as in most other areas, is not to reject outright technological interventions into the brain, since some are helpful and assist individuals to live as they seek to live. This is what I regard as moral biotherapy, but it is far removed from moral bioenhancement that works exclusively at the neural rather than the moral, whole person level.[45] While this is just one illustration it is a manifestation of the Christian's acceptance of limits to human overcoming. The hope of the gospel is an eschatological hope that looks to the fulfilment of God's purposes in the renewal of all things – our bodies and relationships included.[46] Christians facing major ethical choices need to arrive at the position that, no matter how important it is to return to good health or have children of their own, the overriding thrust is their obedience to the call of God. Any technological solution is to be adopted within the context of one's ultimate trust in, and dependence upon, the goodness of a loving God and Saviour.

ENGAGING WITH OTHERS

For Christians there are foundational questions to be asked of any biomedical procedure. Will it help people to image God better and acknowledge him as creator and sustainer? Will it facilitate patients' relationship with God, or will it detract from this? Does it take into account human finiteness and our ultimate dependence upon God? Is it likely to enhance or detract from the fundamental role of community and family? Is it aiming to bring about bodily perfection and the elimination of all suffering, or is it far more realistic and constrained in its objectives?

These questions can be rephrased for those for whom Christian thought forms are alien. Since there are almost always points of intersection that stem from shared values, even when the foundations that have given rise to them are different. Will the procedure assist people relate better with their families and communities? Is it realistic about what medicine and human endeavour can achieve for this individual? Is it open about the limitations of medicine? Is it prepared to admit that care is sometimes preferable to futile efforts at cure?

Christians are to seek common values-based language with others. It will not always exist, but where it does it should be exploited, as those with different outlooks come together to advance a common cause. Ways forward along these lines are an attempt to speak to and with those with distinctly different worldviews. Christians should have an advantage, in that they are able (theoretically at least) to cast a critical eye over the available technology. They do not have to go in a technological direction and this gives them great freedom. They have the opportunity of elaborating what compassion and love of neighbour amount to when faced with serious incapacity. However, if this is to be meaningful it is essential that Christian communities themselves demonstrate what Christian practice looks like in the midst of the murkiness and difficulties so often posed by illness and ineptitude. And the most demanding requirement of all, Christians have to demonstrate how they handle tensions inherent within the diversity of responses almost inevitably found within the church itself.

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45 D. Gareth Jones 'Does bioenhancement improve people's morality?' *Zadok Perspectives* (2014): 123, 15–17.

46 Ted Peters, 'Resurrection of the Very Embodied Soul?', in Robert John Russell, et al., eds, *Neuroscience and the Person: Scientific Perspectives on Divine Action* (Indiana: University of Notre Dame Press, 1999), 305–26; N. T. Wright, *Surprised by Hope: Rethinking Heaven, the Resurrection, and the Mission of the Church* (New York, NY: HarperOne, 2008).