D. Gareth Jones

The Changing Face of the Science-Faith Dialogue in a Biomedical Arena

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The contribution of the ASA to science-faith discussions is indicated in part by the degree to which it has facilitated openness and dialogue between those of dissenting points of view. In doing this, it has provided numerous opportunities for the contribution of scientific thinking and perspectives in debates at the interface of biblical and scientific territories. However, attention in the science-faith area is frequently dominated by evolutionary and allied philosophical questions, with little attention paid to the biomedical domain; this problem arises because scientific input is frequently slender at best, suggesting that bioethics is peripheral to mainline science-faith discussions. By reference to my own experiences and drawing on a range of publications in JASA and PSCF, I argue that the ASA has contributed immensely over many years in spite of the contentious nature of some of the conflicts. I draw attention to the need for flexibility, open-mindedness, and humility when confronted by the moral ambiguity so often encountered in bioethical decision making. I also argue that science has a crucial role to play in these discussions placing them within the mainstream of science-faith dialogue. However, what stands out is the centrality of specific situations, with their demand for in-depth scientific analysis and for determining what might best serve the needs and welfare of human patients.

A society's journal provides a glimpse into its interests and concerns. With this in mind I have gone through issues of *Perspectives on Science and Christian Faith (PSCF)* and its predecessor, *Journal of the American Scientific Affiliation (JASA)*, over the period 1949–2015, to examine the prominence of bioethical issues. The first evidence of an article that I would class as examining bioethical issues appeared in 1962, on birth control. Two other articles appeared in the remainder of the 1960s, on medical practice and control of our genetic future. This mirrors the relative lack of interest in bioethical issues more widely. This began to change in 1970 with a major article from the Christian Medical Society outlining a Protestant affirmation on the control of human reproduction, along with four responses. Taking 1970 as a starting point, sixty-six articles on bioethical concerns (excluding articles on environmental ethics, homosexuality, and those on neuroscience and psychology) have appeared. This amounts to a little less than one bioethics article for every three issues. What is interesting is that the number of articles has remained remarkably constant over this period, suggesting there has been little in the way of an increase in interest over recent years, despite the burgeoning of interest in society.

However, these comments have immediately to be balanced by reference to some

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of the notable contributions made by ASA members over this period. Among Richard Bube's many contributions to the journal there were ones specifically on bioethical topics, including ethical guidelines, abortion, euthanasia, the biological control of human life, and the slippery slope in bioethical debate.[1] James Peterson's contributions have included articles on what we owe to future generations, and the ethics of altered nuclear transfer.[2] However, his major contribution is to be found in his books, *Genetic Turning Points*[3] and *Changing Human Nature*.[4] Other topics have included the future of medical science,[5] ethical issues in high technology medicine,[6] the repository for germinal choice,[7] recombinant DNA,[8] embryonic stem cells,[9] and genethics and virtue ethics.[10] Theologians such as Bernard Ramm and Carl Henry presented their ideas in the early years: Ramm on a Christian definition of death and biogenetic engineering,[11] while Henry provided a perspective on Christianity and medical frontiers.[12]

My own bioethical contributions in the journal have covered a range of fields from abortion to the reproductive technologies, from nonexistence to contemporary medical scandals, and from genetic issues to biomedical manipulation and how we can cope with our disagreements over bioethical dilemmas.[13] I have been grateful for the manner in which the journal and its editors have supported these forays into bioethics. They have recognized that, while the ongoing debates over evolutionary origins have been obstacles to harmonious existence within many Christian communities, there have been equally disruptive debates within biomedicine. Of these, abortion stands out as a trigger for dissension, but it has not generally been recognized as a science-faith issue, since little attention has been paid to its scientific component.

This lack of attention to the contribution that science can and should make to these discussions has had profound implications for the way in which many Christians contribute (or fail to contribute) to these biomedical topics. My starting point has consistently been the presupposition that scripture is seminal in unravelling the many moral conflicts at the beginning of human life. Alongside this has been the realization that there has to be serious analysis of the increasing array of technologies involved. Any Christian contribution lies in balancing relevant scriptural precepts with the implications of the technological interventions, seeking wisdom and the guidance of the Holy Spirit as to how each is to inform the other.

Implicit within this approach is dependence upon a detailed knowledge of the science, alongside an understanding of nuanced theological insights. It is not enough for bioethicists or theologians to rely upon cursory scientific generalizations, any more than they would rely upon the perfunctory ethical or theological input of amateurs. If science is to be taken seriously, as I consider it should be, care is required to take note of the thrust of the latest science, especially its reliability and the varying interpretations that may exist within the scientific community.

In what follows I probe a little more deeply into two particular illustrations of the support I have received from *JASA/PSCF*. While these are discussed in personal terms, they throw light onto the broader challenges experienced by Christians in coming to terms with bioethical debate, challenges to which I return in the later sections.

"Making New Men"

In 1974 I embarked on an assessment of the biological revolution as I, and others, saw it then.[14] From the perspective of the twenty-first century, there is much that seems quaint, quite apart from use of the terms "men" and "man" rather than "humans" and "people." The ethical analysis is also rudimentary. Nevertheless, it marked a tentative beginning into a relatively uncharted area for Christians, whether theologians or scientists. However, Paul Ramsey had done important theological work in the 1960s and 1970s[15] and Donald Mackay was beginning to cast his penetrating scientific eye over some of the issues.[16] Other evangelical contributors in the late 1960s and 1970s were thin on the ground and concentrated on birth control and abortion[17] or were concerned with any postulated eugenic potential.[18]

In my 1974 article in *JASA,* I contended that Christians should be preparing themselves and their communities to meet the future, since the developments then underway were raising both practical and theoretical challenges due to the increasing control they foreshadowed over human life. I was convinced that if theology was to be relevant, it had to encompass what were generally regarded as secular issues, such as prenatal manipulation, including *in vitro* fertilization (IVF) and prenatal adoption, the

production of chimeras, genetic engineering, preventive genetic medicine, cloning, organ transplantation, brain research, and mood-controlling drugs. These possibilities were all beginning to be contemplated in the early 1970s, and I argued that Christian scholars should have been actively engaging with them. But little was happening. While much has changed over subsequent years, these and other biomedical innovations have transformed the expectations of everyone, bringing with them a medley of theological repercussions.

In publishing articles along these lines in the early 1970s, the ASA was playing an important role in acquainting Christians and their communities with critical dimensions of the new world into which we were all moving. At the time, they were not regarded as particularly controversial, since they were looking ahead to what was on the horizon, and they may have appeared more akin to science fiction than to rapidly approaching scientific reality.

This is well illustrated by one of the topics addressed in that article, IVF. In 1974 it was still at the experimental stage, and, for most people, of little more than futuristic interest. At the time, I commented on the apparently formidable gap between Aldous Huxley's novel *Brave New World* and the experimental embryological work then underway. For me, this was an illusory gap, since once it had proved possible to interfere with the future stages of human development outside the body and in the laboratory, the far more dramatic developments in human patients would be accomplished, given time.

This turned out to be correct just four years later, in 1978, when the first child born using IVF entered the world to much fanfare, acrimony, and dubious acclaim.[19] This did not require any great perspicacity on my part, only sufficient interest in the area and a reasonable knowledge of reproductive biology. At the time, I was prepared to accept the legitimacy of IVF as a technological approach for Christians suffering infertility on the ground that God has given humans responsibility for exerting authority over themselves and their environment. Implicit within this stance was an awareness and acceptance of the high degree of manipulation over human reproduction that IVF and procedures that might stem from it in the future would entail. I was aware of the potential dangers and sought to identify limits that would have to be taken into account from a Christian angle.

In outlining what I described as "a theology of modified man," I highlighted what I regarded as essential parameters requiring attention. These were the inevitability that research in the biomedical areas would continue, with substantial impact on human existence and expectations, leading to change in our lives and in notions of human freedom. This entailed examining what might constitute the "ideal" human being, and what might lead to the dehumanization of people. In view of these developments, I turned to the role of human beings as vice-regents for God, the relevance of this for the manner in which we approach these new challenges, and the significance of the stance that ultimate control lies with God alone.

The tenor of the paper expressed my openness to developments in these biomedical areas, an openness that can be put down to my commitment to scientific investigations.[20] As a biomedical scientist, I was not averse to these explorations, although the context in which I assessed them emanated from my Christian commitment and my ultimate dependence upon God and his purposes. In viewing humans as those who image God, I was prepared to recognize their God-given power and ability to transform his creation. Over against this was the countervailing recognition that humans rebel against God and misuse their freedom and capabilities to the detriment of each other and the community.

At the time, the apparently academic tenor of this debate with its futuristic overtones elicited little response. However, all was to change in the mid-1980s, when the issues began to be seen as engulfing all and sundry inside the Christian community as much as outside it. If nothing else, this demonstrated that the ASA, through its journal, was ahead of its time in delineating a realm that was to become of intense interest and relevance to Christians of many stripes—those with infertility problems through to theologians and policy makers. And the ASA would provide an outlet for airing some of these controversies and enabling discussions to occur.

Censorship and Controversy

"At 5:00 a.m. on Wednesday, 6 June 1984, my world was changed." These are the opening words of my article "The View from a Censored Corner" on the withdrawal from publication in the United States of my book *Brave New People*.[21] The point in raising this

incident in the present article is not to recapitulate all the claims and counterclaims of that feverish time, nor to pass judgment on any of the parties involved, but to acknowledge the role of the ASA in being prepared to provide space in its journal in which to discuss the issues. Further issues were elaborated on in more general terms in a subsequent article in *PSCF,* "Coping with Controversy: Conflict, Censorship and Freedom within Evangelicalism."[22]

While this incident is, in some respects, of no more than historic interest (after all, it occurred over thirty years ago), it continues to resonate in both bioethical and scientific circles. This is particularly so within Christian communities, since it draws attention to the manner in which Christians cope with the intersections between science and faith, and between technological possibilities and biblical revelation. These interstices are found in numerous realms, but are of special poignancy in biomedical areas since they touch on immediate human concerns. Will the technology enable me to have a child? Will it enable me to have a disease-free child? How do I balance the good of having a child against the destruction of embryos? What will be the consequences of genetic knowledge for other children in my family or for my siblings? Am I playing God and taking too much control into my hands? Am I lacking trust in the goodness and mercy of God when I seek technological answers to fertility and congenital problems? Comparable questions and concerns emerge in all the other biomedical areas through to the end-stages of our lives as human beings.

Unfortunately, they are the stuff of deeply divisive debates within Christian circles, on account of the apparent challenges they pose for biblical revelation.[23] It is essential that scientists enter the picture, and yet for scientists who are Christians this is also troubling territory. It is far easier for scientists to confine themselves to the boundaries of their disciplines and expertise, where they can function as good practitioners, subject only to the legitimate controversies of their discipline. As Christians, they can function just like anyone else within their Christian communities, and not attempt to bring their scientific expertise to bear on theological and ethical dilemmas. By functioning with this two-compartment model, they remain immune from biblical and doctrinal controversies, but neither are they in a position to utilize their scientific expertise (biomedical expertise, in this instance) to assist fellow Christians seeking guidance when confronted by deeply conflicting human decisions in their own lives or in the lives of their loved ones. How is the church to learn and how are ministers to fulfil their pastoral duties, if those with the appropriate scientific knowledge remain silent or are not listened to?

My stance has been to involve myself in the muddy waters of biomedical ethical conflict as a Christian scientist, recognizing that I may on occasion be wrong and that conclusions I reach may not be useful or faithful to the two "revelations" (science and scripture). It is here that the ASA is crucial as I and others attempt to listen to both sets of input. This accords with ASA's position on controversial issues:

> As an organization, the ASA does not take a position when there is honest disagreement among Christians on an issue. We are committed to providing an open forum where controversies can be discussed without fear of unjust condemnation. We believe that this is a necessary environment for any process of arriving at truth and understanding.[24]

In *Brave New People,* the focus of my attention was IVF, artificial insemination, cloning, amniocentesis, genetic counseling, and the whole technological environment responsible for these developments. These were little-explored topics within Christian circles in 1984, and I sought to rectify this for a general Christian readership. Unfortunately, I touched on the topic of abortion in a chapter on "therapeutic abortion," taking what to my mind was a fairly protectionist position, although not an absolute one, when it came to the embryo. In some quarters, that was unacceptable, and there was no room for such views within evangelical circles.[25]

What was interesting then, and continues to be of interest today, is that practically no attention was paid to the predominant thrust of the book, namely, the reproductive and allied technologies. These were the ones where my scientific expertise was being brought to bear, and yet they were ignored. As one surveys the scene today, abortion continues to be as fraught as ever, and while there have been varying degrees of opposition to the reproductive technologies by some theologians and Christian ethicists,[26] in practice, many Christians accept the benefits that these technologies bring. In other words, the technologies have been largely accepted and ones in the pipeline will probably be as well. Whether these

responses are thoroughly grounded in nuanced theological and scientific considerations is a moot point. Ongoing serious analyses informed by careful theological reflection are as important as ever.

In my 1985 and 1988 articles, I discussed a variety of issues that I saw as arising from the debate over *Brave New People*. I argued that a temptation to which evangelicals are prone when discussing ethical issues is to think that generalizations can suffice in the real world.[27] I suggested that evangelicalism remains very uneasy about technology,[28] not all technology but certain forms of it. One gets the impression that some technologies are accepted while others are rejected. At that time, I referred to genetic engineering, IVF, and artificial insemination as falling into the suspect category. That list has undergone modification in the intervening years, as some procedures have drifted into acceptance while other suspect ones have arisen to fill their places—notably so-called three-parent embryos/babies (mitochondrial replacement therapy), germ line modification, derivation and use of embryonic stem cells, animal-human hybrid embryos, the use of fetal tissue in research and therapy, and all forms of cloning.[29] This is not to suggest that all such procedures should be employed or even accepted, but blank rejection of these and equally ready acceptance of procedures such as induced pluripotent stem cells,[30] shows a lack of scientific sophistication, let alone stringent ethical analysis.

In my 1988 article, I also asked if there is a legitimate place within evangelicalism for those who are professionally trained in areas other than theology, and capable of honest exploration of these other realms, whether in science, medicine, economics, or politics. I wrote: "Without such interdisciplinary exploration, the response of evangelicals will owe more to conservative attitudes than to serious biblically informed assessment."[31] Silencing the contribution of scientists marks the death knell of serious engagement with contemporary culture and practice; here, and in marked contrast, the ASA comes to the fore. In the absence of publishing outlets like those provided by the ASA, God's kingdom on Earth is diminished.

The contribution of scientists to debates like this will only occur when it is generally accepted that mutual interdependence is not an optional extra for Christian communities, but is fundamental to their integrity.[32] With this in place it becomes possible to have healthy debates over complex ethical issues, something that one expects to find in a publication like *PSCF*. This can be done when we believe in intellectual freedom on the grounds that the person redeemed by Christ has been set free and liberated by the gospel, allied to which is an acknowledgment that all truth is God's truth.[33] These are high expectations, and from time to time we all fall short, but the role of a Christian community is to pick each other up and to encourage each other to persevere in the name of Christ, even when we disagree with them.[34]

Flexibility, Open-Mindedness, and Humility

How do my reflections relate to the major themes identified by Christopher Rios,[35] that is, the centrality of the findings of mainstream and authentic science, the insistence on neutrality stemming from open-mindedness about controversial issues, and an unwillingness to blur the lines between science and theology?[36]

While these themes emerged predominantly in connection with evolutionary discussions, they are surprisingly apt for biomedical issues. These themes raise their own sets of queries. If Christians in the sciences are to function as exemplary scientists, can they also function as exemplary Christians (in the sense that their beliefs are faithful to the biblical revelation), or will one have to give way to the other? What is the biblical revelation and what if it appears to be in opposition to what the best science is claiming? Obviously, constructive dialogue becomes essential, and with it, a willingness to listen to the viewpoint of the other. This appears to be the basis of the *Four Views on …* cadre of books, the value of which lies in providing opportunities to respond to those with a differing viewpoint, thereby setting up a conversation. I am not in a position to know to what extent people's perspectives shift in light of these conversations, but at least there are serious attempts to bridge what, on occasion, give the impression of being unbridgeable gaps.

Any such attempts at speaking across well-recognized divides necessitates *flexibility*. The difficulty with this notion is that it reeks of compromise. For instance, flexibility over the embryo or abortion may be viewed as equivalent to the situation ethics of Joseph Fletcher with its flexible, case-by-case approach.[37] For Fletcher, the central driving force of

situation ethics was love—with people placed before principles and the rightness of actions judged in relation to the situation in which they take place.[38] It is a form of consequentialism, paying no attention to the nature of the act or what moral significance it may have. Were this approach adopted today, it would see no drawbacks in any biomedical technology nor in the extent to which technological procedures are to be employed.[39]

Taking account of the situation in which people find themselves when facing major ethical decisions is not akin to this old form of situation ethics. People live in community and exist in particular family and social contexts. This approach might best be described as "context ethics," since no two contexts are identical.[40] Consequently, two Christian families facing similar situations may respond in different ways to the possibilities opening up before them—and yet both are faithful in their Christian walk.

Flexibility in turn demands *open-mindedness*, another of the virtues stressed by Rios.[41] This, too, can be misinterpreted to imply vagueness, and an unwillingness to be committed to strict rules. However, no scientific input will follow strict rules, but will seek new evidence and new ways of better describing what it encounters. Hence, if a rules-based approach is adopted and is regarded as foundational, there will be conflict. As far as the ASA is concerned, open-mindedness is a *sine qua non*, an approach from which it would be detrimental to resile. This equates with humility and a willingness to accept that none of us has all the answers in very uncertain and unexplored territories.[42]

Bube's position on maintaining the distinction between science and theology has enormous attraction from a scientist's perspective.[43] Once this is lost, it becomes difficult to recognize where science begins and ends, and where theology begins and ends. This is not to argue for an impregnable barrier between the two, but for mutual respect for the domains of each. Neither does this lead to a position whereby each is unfettered. The notion of complementarity, so effectively set forth in the 1960s by Donald MacKay,[44] and stemming from the earlier work of C. A. Coulson,[45] needs to be revisited. Working from concepts in physics, MacKay argued that scientific and Christian descriptions complement rather than contradict one another. Both are needed in that they bring their complementary perspectives to bear on reality. Each has to be justified in its own terms, and neither should stray into the territory of the other. Hence, while each listens to the other, and is prepared to learn from the other, it recognizes the limitations and extent of its own domain. In arriving at a view of the world, the scientist is to be prepared to make use of theological concepts, while the theologian is to be prepared to make use of scientific insights. At no point does the scientist assume, or reject, a theological mantle; neither does the theologian assume, or reject, a scientific mantle. While this notion was developed in the physical sciences, it has the potential to be elaborated in the biomedical sciences. Here it would be expected to take account of the input of patients and their families, their social context, and their view of the world, as well as that of clinicians and scientists, and biblical data.

The ASA statement of faith has four planks.[46] Two of these are especially relevant for my context: acceptance of "the divine inspiration, trustworthiness and authority of the Bible in matters of faith and conduct"; and recognition of "responsibility, as stewards of God's creation, to use science and technology for the good of humanity and the whole world." The latter encourages scientific exploration within the biomedical realm, with the proviso that it has the potential to benefit humanity. This opens the way to the use of technology in the service of individuals and their communities, necessitating serious ethical analysis as to how this will be provided. The challenge for Christians is to determine the principles and values to be employed in arriving at these decisions. Apart from the generally used basic ethical values commonly encountered in bioethical analyses—respect for autonomy, beneficence, nonmaleficence, and justice[47]—plus others often taken into account such as respect for persons, human dignity, and truthfulness and honesty, where does "the authority of the Bible in matters of faith and conduct" enter the picture?

I have often struggled to know how best to interpret this statement when confronted by dilemmas raised by developments in contemporary biomedical technology. While the values of secular bioethics are generally helpful, they make no claim to be derived from scripture. They are not antithetical to scripture, but they omit reference to spiritual realities and throw no light on Christ-centered directives. The authority of scripture may well lie in commands such as "do not kill" and "do not steal," but these

are generalizations that underlie the ethical values of most within bioethics, and that themselves require interpretation in specific contemporary contexts. Further, they are not Christ-centered and fail to take account of Jesus's directive, "to love one's neighbor as oneself" (Mark 12:31). Note that here, the contribution of theological ethicists becomes central. Let me take as examples the writings of three of them: Allen Verhey, Neil Messer, and James Peterson.

Verhey looks to scripture with the proviso that scripture is always to be read humbly.[48] No single scholar or church tradition has all the answers on a host of bioethical quandaries. Decision making on many bioethical issues moves into far less definitive territory than that suggested by any simple "right" or "wrong" responses: in most ethical conflicts, a solution lies somewhere between the extremes. This is illustrated by how Paul approached the eating of food offered to idols, an activity that was not always right or always wrong. 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 Cor. 8:1–13).

Christians should avoid any hint of arrogance by which they know unerringly that their interpretation of specific bioethical dilemmas is the correct one. Christians are to take seriously the context provided by the Christian community in which together we 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. By all means, suggest ways forward; by all means, suggest the path or paths that appear to be most compatible with scriptural norms and the clinical/scientific evidence. But this approach is far removed from pontificating that this or that is *the* Christian way when faced with decisions regarding infertility; facing congenital anomalies in an embryo, fetus, or child; or continued use of chemotherapy in a terminal clinical situation.

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 toward 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.[49] On the other hand, he also stresses that our powers are far from being messianic. Hence, we are not to have extravagant expectations of any human power, including medical powers, and they are never to be idolatrous.[50] Herein lies a crucial balance, the midpoint between realistic expectation in what technology can achieve and in overexpectation 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 also 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."[51] 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.[52]

Messer has sought to unpack Verhey's general directions with a series of what he describes as diagnostic questions.[53] 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 toward the material world (including our own bodies)? What attitude does it manifest toward past human failures? What attitude does the project embody toward our neighbors?[54] For Messer, love of neighbor is a central theme in Christian ethics, and he seeks to apply this to a wide variety of groups, including embryos.

Peterson pays considerable attention to the validity of technology used in biomedicine, paying particular attention to genetic issues.[55] He displays far greater openness than many Christian commentators to the good that may be accomplished by human intervention. For him, "shaping the world is part of the God-given mandate for human beings to share in the redemption and development of creation."[56] While others may regard this as leading to pride,

Peterson recognizes the dangers of sloth and disobedient apathy in neglecting the possibilities opened up by technological developments. In discussing genetic ventures, he de-emphasizes the physical side reminding us that, for instance, "day care workers have more impact on future generations than geneticists."[57] Such an approach means that he is far less concerned about the risks of such genetic intervention to (potentially) eradicate conditions such as Down syndrome or cystic fibrosis and even forms of enhancement, than are many Christian writers. Underlying this openness is the potential it could bring to enable people to follow more worthy goals. While far from assured, it points to the centrality of Christian imperatives in directing all technological ventures to the glory of God and the benefit of others. Peterson writes: "Genes create terrain, not destiny. A good genetic start does not guarantee a good outcome; it just makes such more likely."[58]

For me, as for Peterson, the Bible provides guidance that will assist those who wish to act as Christ's followers in the contentious and highly problematic world of modern medicine.[59] Acknowledgment that biblical guidance is at a general level does not devalue it. But it does leave a great deal to the judgment and discernment of individuals and communities, and yet 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.

Science-Faith Dialogue in Biomedicine

Science-faith dialogue should not be confined to the large questions raised by evolutionary debate or by the physical sciences. While in no way demeaning or underestimating their importance, they are to be complemented by recognizing the science-faith dimension of conflicts in biomedical areas. When this is done, scientific input is seen to be essential: strictly speaking, this is the interface between technology, ethics, and faith.

My approach to ethical issues is that of a scientist working within a Christian frame of reference. This leads to an examination of the available evidence, regardless of whether this comes from the science, the technology being used, or scripture. The dimensions of the specific situation are to be examined with a view to determining what might best serve the needs and welfare of human patients. The biomedical context dwells on specific situations and instances. These go beyond recognizing God's presence and character in such generalities as the beauty, awe, and wonder of the creation, no matter how valid those considerations may be.[60]

Biomedical endeavors are inseparable from specifics demanding precise answers and directives. Seeing God in medicine or healing is ambiguous, since we are let down when healing does not come, when there is no cure, and when the patient dies. Consequently, there is no escape from a suffering God rather than a triumphant God. By all means, utilize appropriate scientific expertise, and yet this will not make humans immortal. At some point, they and we will die. Where then is God in this journey of what may be interpreted as inevitable decline? He does not offer endless life as mortals, and those who seek it in technology—through transhumanism, the creation of cyborgs, the potential of cryopreservation, or the production of a cognitively enhanced species—will be let down.[61] Technology per se has no answer to decline and death, no matter how much life expectancy is increased, increases that the Christian faith should have no desire to minimize.

The challenge for Christians is neither to decry nor eulogize technological advances, but to put them in perspective. A Christian paradigm faces up to the inevitability of suffering and mortality, not in a fatalistic way, but by seeking to be faithful to Christ in the midst of suffering: to care for the vulnerable.[62] When confronted by suffering and uncertainty, the Christian is to examine the technology available and the manner in which it might be used to assist in this situation. What will bring glory to God? How best can I respond as a follower of Christ?

Technology will not provide an answer, but neither is it an enemy. It is a tool to be employed in the service of Christ. For medical scientists, this is an encouragement to excel at research, both fundamental and applied. In uncovering more secrets of the human body, its wonder and intricacy, its complexity and regenerative powers, scientists are cooperating with God in understanding his creation. In helping to conquer and quell the ravages of disease, they

are bringing control and order to that which is disordered and destructive. In helping to increase life expectancy and the quality of that life, they are giving opportunities to those who would otherwise lack them, especially to those in the majority of the world where life expectancy remains low. Those of faith in these societies are thus enabled to appreciate God far better and worship him all the more. Scientists, in principle, are enhancing the beauty of human life and the depth of human community and are providing a foundation for people to be educated and provided with a far richer quality of life. In these ways, biomedical scientists are laying a foundation for the enhancement of faith.

When confronted by the possibilities opened up by a dramatic new field like regenerative medicine, theologians are on occasion apt to decry this as a threat to God and to all that we hold dear.[63] Humans, it is claimed, are accruing excessive power that may transform them and lead to a biological Armageddon. These are fears that have surfaced repeatedly over the years in relation to cloning, genetic engineering, and the reproductive technologies.[64] All too often, however, they have lacked an informed scientific base and have proved unhelpful and misleading. If they had been accompanied by a scientific analysis of the state of the science, the theological discussion could have been far more profitable and accurate. This in no way overlooks the fallibility or limitations of scientific analyses, but it introduces an evidence-based approach as one would expect from scientists.

The biomedical area is ripe for investigation as an integral feature of the science/technology-faith domain. We are diminished to the extent that we relegate it to a category of its own in which science is seen to play a negligible role. Christian scientists can be encouraged to take an active part in this world, and to devote their energies to increasing our understanding of the body in its many dimensions, and in alleviating suffering and loss on the part of humans like ourselves. The realization that we are living in an imperfect world with its "not yet" character should constrain our pretensions and idealism,[65] but, conversely, it does not militate against the contribution that scientists make to better the world and human beings within it. This, in itself, is a rich outcome of the role of science as a gift from God, and encapsulates the place that the ASA has, and will continue to have, in advocating for the role of Christians in this God-given endeavor.

This article also serves as a plea to ASA and its members to give greater attention to bioethics, and to revive the Bioethics Commission as one means to this end.

Notes

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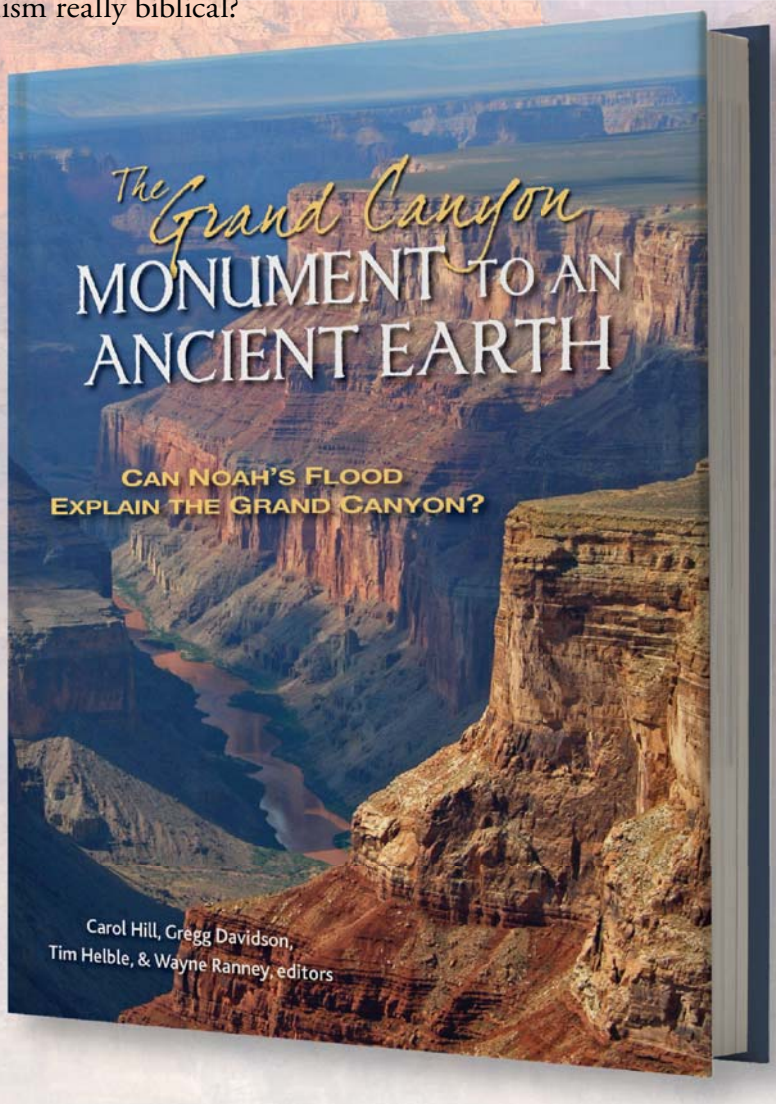

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