

Introduction

The extended reflection that stretches across this book might be considered an interesting intellectual exercise, but does it have any real world consequences? As you will have found, many of the authors here are well aware of the significant implications that result from ways that we narrate the relationship between science and religion. In this chapter, I'd like to explore some ways that this is the case specifically with regards to ethics. This is no small undertaking in my view, as the religious implications for science and vice versa do indeed have serious consequences for ethical reasoning.

First, however, it is important to clarify what I mean by “ethical reasoning” as this can have many possible meanings. For example, there are many professional ethicists that are placed within a particular subfield of science or engineering or laboratory in order to avoid harm, particularly to human subjects involved in research, but also in order to call attention to unanticipated risks and dangers. In this case, ethicists serve as a resource for front-lines scientists who may not always have the time or training to reflect on and respond to the ethical implications of their work. A more technical term for this kind of reflection is **casuistry**. Casuistry focusses on what can often be relatively minor procedural questions and these issues can be embedded in very specific contexts. At the other end of the spectrum lies **normative ethics** which concerns itself with big-picture questions which may transcend a specific context. As we shall see, there are important normative consequences which result from this science and religion debate as well. It is also worth noting that within the domain of **normative ethics** there are a range of secular and theological approaches to moral quandaries. A non-religious approach to ethics might take up the emphasis on **virtue** pioneered in the work of Aristotle, the emphasis on **duty** which was first commended by Immanuel Kant, or the argument by thinkers like Jeremy Bentham and J.S. Mill that **utility** should be considered the best arbiter for ethical decisions in seeking the greatest good for the greatest number of persons. Theological approaches to ethics are generally thought to rely upon sacred texts as a source for moral norms, alongside theologically conceived concepts such as **natural law** and **justice**. However, in recent years scholars have noted the breadth of “religion” as involving many factors: historical traditions to be sure, but also personal experience, commitment to community, and **non-propositional** forms of cognition including **aesthetics**, self-transcendence, emotion, and intuition. With this in mind, it would be difficult to argue that any of the supposedly secular philosophical traditions are wholly non-religious (that is, devoid of any account of the divine, or of human aesthetics or experience of transcendence) or that any of the resources explicitly located within religious moral philosophy are off-limits to a non-religious ethicist. On the basis of this more complicated scholarly ethical landscape, I will not aim to respect the boundaries of an **essentialised** “religious” or “secular” normative ethic, but will instead cast my net a bit more broadly, exploring some specific ethical questions which have arisen recently in order to explore ways that the science and religion debate might illuminate or trouble those issues.

Professional Ethics

Let us look first at some examples of professional ethics and note possible ethical contexts and quandaries that may lie there. Though ethical issues are often in the foreground with the medical and engineering professions, bioethics also has significant purchase on experimental science more broadly. Take, for example, the need to test and regulate new pharmaceuticals. Experimenters need to respect the **agency** of the persons they are

working with in their studies, particularly surrounding informed consent and there are specific aversions to modes of treatment or intervention which are rooted in religious belief. Many religious traditions take issue with the drawing or transfusing of blood. Other religious traditions have theologically specific reasons to resist the intentional harming or killing of animals. The ways in which someone maintains or resolves conflicts between religion and science have significant implications for the level of importance they will afford to objections by religious persons and the importance they will place on the religious inclusiveness of experimental science.

On the basis of these kinds of contexts and quandaries, many sub-fields of science which have developed professional codes of ethics. For example, the American Society for Clinical Laboratory Science (ASCLS) has a code which includes a duty to (1) the patient, (2) colleagues and the profession, (3) and society. Generally, the codes present an account of the researcher or scientific practitioner as being virtuous in their conduct, applying rigour to their work, being honest in their representation of data and disclosure of conflicts-of-interest, fair in their work with the public, and careful in their treatment of animals used in research. It is interesting to note that what tends to be the sole mention (if any) of religion or theology among these codes, tend to relate to the desire to avoid conflict of interest and deal fairly with other persons, that is to conduct science in a way that is blind or neutral with regards to religion. In 2007, Sir David King, the former Chief Scientific Adviser to the British Government produced a "University Ethical Code for Scientists", which presents these duties as "Rigour," "Respect," and "Responsibility". Though these documents do not present such civic responsibilities as relating to any specific religious belonging or commitment, this is in fact often the case in practice. Moreover, as I have noted above, the secular accounts of duty and responsibility have a significant historical link to theological accounts of justice, human wellbeing, and virtue.

Hinting towards a more civil and constructive relationship between science and religion is the presence of religious leaders, priests, and theologians on a variety of official consortia in scientific ethics. Islamic theologian and scholar Prof Mona Siddiqui sits on the present Nuffield Council on Bioethics and she was preceded by other British theologians such as Robin Gill, Richard Harries, Duncan Forrester and Gordon Dunston. The same is true for the official German Ethics Council, which is currently chaired by a German theologian, Peter Dabrock and the official body in France, the Comité Consultatif National d'Ethique, which has statutory representation by theologians.

It is important to note that these collaborations are not unambiguous for science *or* theology. In surveying the significant representation by American theologians in professional medical ethics, Stanley Hauerwas notes:

Though religious thinkers have been at the forefront of much of the work done in the expanding field of "medical ethics," it is not always clear that they have been there as religious thinkers... often it is hard to tell how their religious convictions have made a difference for the methodology they employ or for their response to specific quandaries. Indeed, it is interesting to note how seldom they raise issues of the meaning or relation of salvation and health, as they seem to prefer dealing with questions of death and dying, truth telling, and so on. (Hauerwas, 546).

We find a similar critique coming from Ted Peters just over 20 years ago in his book *Science and Theology: A New Consonance* (Oxford: Westview Press, 1998), where Peters observes that there is an encouraging level of conversation emerging between science and theology, but that this conversation can often be one-sided with

science leading the way and theology rarely occupying a leadership role.

When attempting to construct a bridge between two scholarly conversations it is unavoidable that this work will involve some level of translation and adaptation to your dialogue partner. In Hauerwas' (and Peters') diagnosis this kind of work which brings together the broad public of medical practitioners or scientists with theologically minded scholars is important work, but it carries at least two possible risks. On the one hand, there is the risk that the work of translation will be unbalanced, and here both our writers worry that religious thinkers may leave behind their particular frames of reference far more than the scientists they seek to dialogue with. The second risk is that as a result of this imbalance, the theologians involved may fail to bring an important contribution: the more fundamental discussion of moral good and human flourishing which provides a cloth into which we may weave more specific ethical casuistry. In particular, the worry here is that the emphasis in these professional bodies on "issues" and specific ethical questions can sideline more fundamental reflection on the notion of good science and the practice of medical care.

There are significant tensions here which cannot be resolved in the space of this brief chapter. For now, I want to highlight the way that these two different ways of framing ethical reflection - (1) casuistry and (2) more fundamental normative ethics may exist in some tension. Different parties to this debate between science and religion may naturally lean towards either "professional" or "normative" ways of framing ethical deliberation and risk some kind of imbalanced thinking. It is also interesting to note that it was much easier to assume earlier in the 20th century that science and theology were intellectually stable ways of interpreting the world, that is, that a person working "scientifically" or "theologically" could assume there were well-established ground rules for how such reflection was to take place or what resources were important (whether this was the scientific method, the bible, empirical observation, or mathematics). This is far less the case in the 21st century. Increasingly the modes of inquiry across a variety of scholarly ways of "knowing" the world are blurring together and overlapping. Keeping this in mind, it may be a mistake to draw too tidy a categorisation of either "science" or "religion".

Normative Accounts of Ethics and Science

Turning away from the role of religion in professional ethics, I would like to briefly examine some of the ways in which the engagement of science with religion may also invoke more fundamental moral claims. It goes without saying that there are many well-noted disagreements between science and religion on "big issues" (on this matter of perceived conflict between science and religion, I commend the chapter by Michael Fuller). Generally, bioethics has been an area where there has been recurring and very public conflict between religious authorities and scientific disciplines. One example can be seen in the 2001 decision by American president George W. Bush to restrict federal funding for research on stem cells obtained from human embryos. In his words, "At its core, this issue forces us to confront fundamental questions about the beginnings of life and the ends of science." Bush's move towards this policy decision was encouraged and celebrated by many religious leaders in America and ran in direct opposition to the formal recommendation by the American NIH (National Institute of Health) embryo research panel in 1994 which encouraged the federal government to fund a range of research involving human embryos. As Bush strove to make clear in subsequent interventions, there were other accessible pathways towards scientific research into adult stem cell lines which were eligible for federal funding, but the plasticity and thus potential for research was greatly diminished.

While some observers of this policy debate have suggested that this is an instance of conflict between religion and science, or perhaps even a “culture war” it is not necessarily safe to assume that there is an unambiguously “Christian” position, at least within the relatively specific space of stem-cell research regulation. Towards this end, it is worth noting that in America, Bush’s successor, also himself a professed Christian, Barak Obama, lifted the ban in 2009. One can also find accounts by theological scholars which argue both for and against embryonic stem cell research (see the readings below for an example). Further, England (which has an established Christian Church and representation by religious leaders in the upper House of Parliament) has permitted embryonic stem cell research, albeit under closely regulated conditions, since 1990.

I have argued in the last section above that the reality of religion and science is much more murky than we might initially think: scientists may be religious, religion may be scientific (i.e. oriented towards empirical reality or working towards positivistic claims) and each individual may work out the role of religion in generating ethical clarity in different ways. In this way, we may find that professional ethics and the casuistry which happens there can be individualistic. This stands in some contrast to the public policy context which may be by necessity corporatistic. Given the broad implications of a policy decision to regulate some area of scientific practice, or the appropriation of public funding towards the development of new technologies (as was the case with Bush’s ban) policy work seeks to find consensus and so must reach for a more fundamental moral ideal or an adequately encompassing pragmatism. Is there a right way to configure the relationship between religion and science on the matter of ethical reflection? Before I provide an answer to this question, I would like to turn to a second example to further highlight the complex dynamics of religion and science in ethical debates.

A more unexpected example can be found within the domain of contemporary climate science. Many authors who write about climate change, including those who write without any particular religious association, emphasise the fragility of the earth’s systems and their vulnerability to anthropogenic (human caused) impacts. To be fair, among religious leaders and communities, there has been a polyphony of voices on climate change, sometimes less-than-harmonious, with some religious leaders describing climate change as one of the key moral issue of our time and others dismissing it as a distraction from more central ethical concerns. Polling data shows a mixed picture, but at the very least, the level of consensus that climate change is a serious issue reflected among climate scientists is often shown to be in some disagreement with the religious public. While many observers of this debate have been quick to dismiss the so-called climate “skeptics” and sometimes religion more broadly, I’d like to suggest that there is more than meets the eye to this debate as well. One reason that some of the latter group have expressed concern with the idea of climate change as a moral issue is that this claim regarding the vulnerability of the earth to human impacts can stand in some tension with the claim that the earth was created by God and as such has a level of durability and purpose which should not be easily thwarted by human misuse.

One of the most famous paintings by the Italian Renaissance artist Raphael is a fresco set in Athens (the title is “The School of Athens”) which depicts a range of famous ancient Greek philosophers standing and interacting in various ways. Of particular note are two central figures: Plato and Aristotle, who are shown to be in conflict. Plato is pointing up to the heavens, presumably towards “pure reasoning” while Aristotle is pointing towards the earth, emphasising the importance of empirical observation informing our **axioms**. This

is a caricature of these two famous philosophers and their positions, of course, but serves to illustrate the point that what we might be tempted to see here on the issue of climate change is a simple conflict between “realist” climate scientists who are informed by empirical observation and “idealist” theologians who are informed by free-standing axioms. We might even be tempted to pick sides, as has been (in)famously done by some scientists who have argued for the priority of reductive materialism against supposedly “superstitious” religious ideas.

However, as others in this book have argued (see Duncan Pritchard’s chapter on Faith and Rationality, for example) it is important to appreciate how there are potentially two fundamentalisms which are being mobilised here, and particularly inasmuch as a resolution of the religion and science debate on climate change may involve the silencing of skeptical religious voices, much stands to be lost. This is illustrated by the resonant suggestion put forward by other scientists that some of the framing of the issue of climate change by climate scientists and in particular the suggestions for public policy which have resulted may not fully capture the relationship between earth and humans. That humans are having an unprecedented and often negative, and potentially disastrous impact, on a whole range of specific ecological systems and many of the earth’s systems (climate, oceans, soils etc.) is agreed on both sides of the scientific divide. However, an urban ecologist may observe, for example, that climate and conservation scientists are not simply passing along their own objective empirical observations. They have their own filters and axioms, and potentially work within a specific understandings of political authority and action (for more on this suggestion, see Mark Harris’ enlightening discussion of metaphysics in his chapter on “Faith and Physics” in this volume).

This becomes particularly clear when we scrutinise these concerns expressed about earthly fragility and find clusters of agreement among some conservationists, that “environmental change” is inherently undesirable. As the “new” urban ecologists point out, the health of a current ecosystem may not necessarily be tied to its early configuration, and in fact we can see how many ecosystems may reconfigure in response to impacts and changing circumstances in order to find unexpected forms of equilibrium and integrity. This position has been represented with the “novel ecosystems” concept, floated by a range of environmental scientists over the past decade. Ultimately the idea here is that though we humans may fear and seek to avoid change, other creatures seem quite happy to adapt and evolve in the meantime. My point here is not that we must choose between these two narratives, that it must be either novel ecosystems OR fragile systems, but that there are a plurality of perspectives on global ecological health *among* scientists. Even more to the point, these different perspectives may lead to different kinds of policy perspectives. Do we seek to create carbon-sinks and preserves which are fenced off from human interaction? Or should our strategies work alongside urban development? The dialogue over these two questions has often been contentious and there is no uniform answer coming from within either science or religion.

There is not adequate space here for me to present all these positions or to argue for my own preference on either embryonic stem-cell research or on climate science (though this is done very well by some of the authors included below in the bibliography). For our purposes here, I’d like to observe that the role of ethicists and philosophers is not to try and referee these arguments from behind an imaginary intellectual fortification. Not only does the religion and science debate generate ethical quandaries, but there is also an ethical shape to the way one *participates* in the religion and science debate. Put simply, both science and religion need to engage with the big constructive questions (what is life? how does it have value?) and they

both also need to participate in empirical observation of the world, including human social politics.

Let's take my this second suggestion for a moment. What I am arguing here is that part of the work of ethics must also include the hard work of public communication. In fact, I would go so far as to say that one of the responsibilities of the moral philosopher (or theologian / scientist for that matter) is to form an understanding of the landscape of public opinion before they try to intervene into a debate with a public and constructive voice on issues like these. Some contemporary ethicists like Robert Froedeman have argued that philosophers should be willing to take up philosophical "field experiments" and other field-philosophers have also begun to engage in more nuanced empirical research. In a way this is a return to a form of moral philosophy which was common before the 20th century, among modern pragmatists and empiricists and among patristic and medieval theologians such as Augustine of Hippo who considered the work of engaging theological reflection with social "reality" to be paramount.

Returning to my first suggestion, I want to argue that there is good reason for both religion and science to appreciate how there is a richly metaphysical basis for both these modes of understanding the world. Appreciating this diversity of opinion and the nuance which may lie behind religious perspectives can help us to see that it may be unwise to dismiss out of hand the claim by some religious persons, taking the example of climate change, that the earth is durable, even in the face of anthropogenic impacts. Perhaps this claim may actually carry a level of wisdom regarding the functioning of the earth's systems, and the assumption that there is an unreconcilable conflict between these two positions may obscure the possibility for a valuable conversation. Of course, many climate scientists are quite aware of this fact, and to a certain degree, what I am problematising here is not the work of scientists, but rather the way the discourse has been configured in public. However, it is also important to appreciate that different framing of our empirical inquiries, whether on a global scale (earth climate systems) or local one (specific creatures in their natural habitat) can close down our ability to consider some ethical positions. What ethics calls for in this situation is an awareness of the limits our own perspectives and a willingness to see possible value in the claims of others - whether scientific peers or religious practitioners. Taking this seriously might lead us to conclude that the title for this chapter should be concerned with the ethical implications of the debate underway between sciences and religions.

So what is the role of ethics in this debate? In the first instance, there may be a pragmatic implication, that is, that certain ways of describing the world have consequences for the ways they enable or prevent certain forms of moral action. We never approach an ethical quandary with our minds as a blank slate, ready to consider any possible option and its merits. Rather, moral reflection requires a high level of critical self-awareness precisely so that we may understand the intellectual limits of our own starting points - the work represented in each scientific discipline, whether algorithmic design in computer science, the engineering of genomes by biologists, or speculation about cosmology by physicists is situated within a culture. In one case, precaution and uncertainty may be preferable and in another we may find someone particularly willing to tackle a problem through innovation and design. I would like to suggest that in order to negotiate the tensions that exist between individual scientists, philosophers and theologians and negotiate the way that these are represented in the public sphere we must jointly pursue an ever-increasing measure of wisdom. This seems like an appropriate common ground on which to set what is a challenging but ultimately very rewarding task of cultivating the common good.

Chapter Summary (150 words)

In this chapter I survey a range of different ways that the debate between religion and science might be described as ethical. I suggest that within the space of professional scientific ethics there has been a tendency to sideline or absorb religious ethical perspectives. I then turn to more constructive “big issue” ethics and examine two specific cases: embryonic stem cell research and climate change in order to highlight ways that science and religion can be reduced to essentialised stereotypes: that scientists work with the real world and religion deals with ideas (and not reality!). I argue that looking more closely at the range of perspectives represented by scientists and religious leaders in both cases presents a much more complex case and that this in turn commends a kind of ethics which should be jointly pursued by both science and religion.

Study Questions

- (1) How might religious persons contribute to professional scientific ethics? Consider kinds of input that might be provided towards specific case studies.
- (2) What are the possible hazards presented by the involvement of religious representatives in professional ethics bodies and panels for scientific practice or theological reflection?
- (3) Consider the cases of animal testing and blood transfusions. In what ways might scientific ethics accommodate the particularities of religious belief and practice?
- (4) Are there ways that an experimental scientist or medical researcher integrate their own religious beliefs into their professional code of ethics?
- (5) Come up with a list of 3–5 fundamental moral issues at stake in embryonic stem cell research. Can any of these be identified as unambiguously belonging to “religion” or “science”?
- (6) What is the role of skepticism and caution in interacting with scientific discoveries?
- (7) How might scientific inquiry be framed as participating in a common pursuit of wisdom? Consider how this might provide different motivation from a framing around “justice” or “knowledge”. What impacts might any of these three emphases have for specific debates underway right now over moral quandaries represented by new scientific discoveries and technologies?

Introductory Readings

Celia Dean-Drummond “How is Theology Inspired by the Sciences?”, in *Conceptions of Truth and the Unity of Knowledge*, ed. Vittorio Hosle (South Bend: University of Notre Dame Press, 2014), 300–323. *In this chapter, Dean-Drummond explores ways that theology is influenced by science and considers ways that theology might provide leadership in this conversation.*

Stanley Hauerwas, “Salvation and Health: Why Medicine Needs the Church” in *Theology and Bioethics*, ed. by Earl Shelp (D. Reidel Publishers, 1985), pp. 205–24. *In this brief chapter (which I have cited above), Hauerwas explores the tricky task of engaging professional ethics with theological reflection.*

Michael S. Northcott, *A Moral Climate: The Ethics of Global Warming* (Maryknoll, NY: Orbis, 2007). Northcott provides an introduction to some of the challenges facing theological engagement with an issue like climate change. The book provides a model of how theologically minded persons can benefit from scientific understanding of this phenomena and some ways that theological reasoning might offer resources for grappling with the spiritual challenges of climate change.

Chris Tachibana, "Responsibly conducting research" *Science Magazine*, Jan. 29, 2016, <http://www.sciencemag.org/careers/features/2016/01/responsibly-conducting-research>. This article in the *Science Magazine* provides a helpful overview of professional ethics in Science and some of the different kinds of questions that are considered "ethical" in current practice.

Advanced Readings

David Demeritt "The Construction of Global Warming and the Politics of Science" in *Annals of the Association of American Geographers* (June 2001) 91(2):307–337. Demeritt focusses on the ways that scientific discourses (such as climate science) have been imagined as working independently of the political sphere. He provides a brisk but thick survey of possible ways of appreciating the social construction of scientific knowledge, which may open up some shared epistemological space between religion and science.

Bruno Latour, *An inquiry into modes of existence : an anthropology of the moderns* (Cambridge, MA: Harvard University Press, 2013). In this challenging text, Latour attempts to provide a new basis for narrating the relation between science and religion (among many other things).

Ted Peters, Karen Lebacqz, and Gaymon Bennett, *Sacred Cells?: Why Christians Should Support Stem Cell Research* (Rowman & Littlefield, 2008). In this book, the authors provide a contrasting account of stem-cell research ethics, and comment on the involvement of theologians in this scientific enterprise.

Freely Available Resources

- Nuffield Council on Bioethics, "Interesting Links" hosted at <http://nuffieldbioethics.org/about/links>. Nuffield provides a huge index of professional scientific and ethical bodies which you can further investigate.
- David King, "Universal Ethical Code for Scientists": https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/283157/universal-ethical-code-scientists.pdf
- Peter Harrison, "Scientific Expertise in a Time of Pervasive Scepticism: Enlightenment Values Cannot Help Us Now" blog post hosted by *ABC Religion and Ethics* website: <http://www.abc.net.au/religion/articles/2017/03/22/4640640.htm> Harrison comments on some of the issues raised in this chapter, but you may also want to browse more widely on the ABC website as there are a wide array of articles by scholars and leaders in various fields on many issues in scientific ethics.

Glossary of Terms

Aesthetics: While aesthetics can refer to the study of beauty, it can also (and this is the sense in which I'm using it in this chapter) refer to a branch of ethics which attempts to broaden out the sources we rely upon for moral deliberation including factors which may be highly evocative but not easily described in propositional terms:

taste, intuition, and a sense of the sublime are all possible aesthetic concerns. *Agency*: Ethicists use the term "agency" to refer to a person's ability (or disability) to function as a *moral agent*. *Axiom*: A basic or fundamental assumption which is taken to be self-evident and serves as the basis for other secondary arguments. *Essentialised*: An approach to reasoning which assumes that certain categories can be universalised on the basis of inherent, stable and common traits. *Normative ethics*: A branch of philosophy which seeks to define possible norms for human action. This can often include arguments which seek to classify actions as right and wrong, and result in a set of rules which can govern human conduct. *Non-Propositional*: In contrast to "propositional" forms of knowledge, which rest on factual description, non-propositional claims and knowledge do not rest upon "facts" and cannot be proven or disproven on the basis of logic. They often seek to explain subjective experience.