Technology, Trust, and Religion

Roles of Religions in Controversies on Ecology and the Modification of Life   Edited by Willem B. Drees

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Preface and Acknowledgements

Technology is a major dimension of human existence, and a major force for change, for better or for worse. Ecological concerns have become prominent in the last decades. They thus become issues of human concern and of human values – issues that merit religious reflection, and thus also trigger reflections on the role of religions in modern, secular and pluralist societies, where the appeal to traditions has been challenged.

In the context of the programme *The Future of the Religious Past* by NWO, the Netherlands Organisation for Scientific Research, a project was funded on religion, ecology and technology. The project is titled *Misplaced Vocabularies: Scientific and Religious Notions in Public Discourses on Ecology and Genetics.* The principal researcher of the project is Willem B. Drees, professor of philosophy of religion and ethics at Leiden University. As a postdoctoral fellow in this project, Tony Watling surveyed the multireligious literature on ecology. The project also encompasses a PhD project by Olga Crapels on religion in public discourses on genetics.

Drees, Watling, Crapels, and Taede Smedes, another postdoctoral fellow working on religion and science, formerly at Leiden University, organized a conference on religion, technology and public concern, which was held at Leiden University, the Netherlands, in October 2006. Several essays from this symposium were selected for this volume. In the editorial process, Drees received extensive assistance from Renée Reitsma, a masters student in the philosophy of religion, and John Flanagan, a Ph. D. candidate in Old Testament Studies, both at the Faculty of Religious Studies of Leiden University, now the Leiden Institute for Religious Studies. The conference, their careful editorial help, and the publication of this volume has been made possible by the grant from NWO, the Netherlands

Technology, Trust, and Religion

Willem B. Drees

We live in a technological culture. Our identities and our responsibilities, our hopes, dreams, and nightmares are all shaped by rapidly evolving technology and its impact on our environment. What is it to be human if we are dependent upon technological artifacts and systems? What concepts of 'the natural' and 'the sacred' are invoked by the accusation of 'playing God'? Will technology transform our religious and humanistic traditions? And will our traditions shape our technological culture? What is the role of religion in relation to public concerns about technology? Is religion a brake upon technological possibilities, a valuable guide that might helps us in the choices we face, or, is religion itself in flux, slowly adapting to new powers?

Are we destroying our natural habitat with biotechnology, or with civil engineering and human greed? Does the ecological crisis call for more refined technology, or should we change our behaviour and values instead? What role might there be for religious traditions in responding to the ecological crisis? And should we be concerned about our abilities to modify living beings: crops, animals, and even ourselves? How might we reflect upon the challenges that have arisen?

Last but not least, how should we make decisions about our common future, in light of ecological challenges and new technologies? And who should make these decisions: scientists and engineers, since they possess expert knowledge? Or are they too narrow minded, concentrating on their inventions as if they were children playing with new toys? What do we use our technology for? This does not seem to be a question reserved for experts only. How can the general public be involved? Can it work with the experts? Do these two groups trust each other? Is the public ignorant,

in the perspective of the scientists? Or are the engineers too narrowly focused, in the eyes of the general public? Matters of trust, expertise and involvement need to be addressed again and again.

These are the issues we will address in this volume: our technological condition (part one), religious resources for the ecological crisis (part two), biotechnology (part three) and matters of trust between scientists and the general public (part four). In this introductory chapter I'll offer some preliminary reflections on these issues, especially on our technological condition, while arguing for a positive appreciation of our technological abilities 'to play God'.

Religion in an Age of Technology

The standard view of technology's place in relation to 'religion and science' can be illustrated well with the titles of two books by Ian Barbour: *Religion in an Age of Science* and *Ethics in an Age of Technology.* This may seem an obvious pair of titles, but it is nonetheless a particular and consequential way of dividing the field; I owe this observation to Ron Cole-Tuner in a private conversation when these books had just appeared. Why not *Religion in an Age of Technology*? And does the absence of *Ethics in an Age of Science*, to take the fourth combination of the pairs {science, technology} and {religion, ethics}, imply that there is no moral issue in relation to scientific knowledge, but that one exists in relation to technological applications?

The underlying issue is in part the understanding of 'science'. There is substantial interest in the religious implications of cosmology and fundamental physics – our attempts to understand the nature and origins of physical reality. Furthermore, there are many books on religion and evolutionary biology, on our understanding of the natural history of our world. In focusing on cosmology and natural history, we deal with aspects of reality that we may seek to understand but (being history) cannot change. But science is not only about understanding reality. Science is also about *transforming* reality. That may not be obvious when cosmology is our prime example, but it is clear when one thinks of chemistry – with its roots in alchemistic practices, seeking to purify reality by transforming elements. Disciplines such as the material sciences are clear examples of this active, reality-transforming side of science, rather than of science as the quest to understand reality.

The case for including engineering among the sciences has become far more serious over time, with a fundamental transition somewhere in

the eighteenth and nineteenth centuries during the rise of chemistry and the control of electromagnetism. Modern technology is interwoven with science; the computer would not be possible without the understanding provided by quantum physics, and genetic engineering depends on understanding the double helix of DNA – and vice versa: progress in understanding depends upon progress in construction.

The underlying issue is in part also the understanding of 'religion'. If the interest in religion, in the context of 'religion and science', is defined by an apologetic interest in arguing for the plausibility of the existence of God as 'the best explanation' of reality and its order, then the prime interest in science for the understanding of reality it aspires to offer. But religious traditions not only fulfil such an 'explanatory' function, they also often have an evocative function and a transformative interest – they call people to work for a better world or to work for this world in a better way, by seeking to liberate beings from bondage. Such liberationist theologies certainly should have an interest in the way we humans transform reality, for better or for worse. Cosmologically oriented theologies and worldviews also need to accommodate the fact that our world turns out to be as flexible and as malleable as technology reveals it to be.

Dimensions of Technology

When speaking about technology, most people at first refer to *devices* such as the telephone, the car, and the refrigerator. We live in the midst of such technological artifacts, machines, as materially present entities. But technology is more. These devices cannot function without *infrastructure.* Think of telephone lines, electricity, and gas stations, and behind those, more infrastructure: refineries, ships and pipelines, oil wells – and there the sequence ends, as the oil deep down in the ground is not itself a product of human technological activity. That is where we touch upon natural resources, at the beginning of the line. And in using oil as fuel we also have to get rid of excess heat and waste products, and thus need not only a well but also sinks to get rid of what we do not use, which generates ecological problems for the atmosphere and the soil.

Technology is also a *social system*, for the kind of actions it requires and for the services it provides. And technology depends on *skills* (and thus on educational systems) as much as on hardware. Highly technical medical disciplines such as surgery are certainly also about technical skills of the

humans involved. And skills are also involved for ordinary people; driving a car is a technical skill.

So far, I have referred to two 'layers' of technology: the material manifestations of technology in devices and infrastructure, and the social, human dimension of organization and skills. There is a third layer when we consider the psychological level. We can also consider particular *attitudes* to be 'technological'. It refers to a way of life in which a problem – whether it's a leaking roof, an illness, or a miscommunication – is not the end of a story, to be accepted as a fact of life, but rather perceived as a problem to be addressed. An active attitude, sitting down to analyse a problem in order to solve it by practical means, is part of our lives. To us this is such a self-evident part of our lives that we may find it hard to understand cultures in which a tragic or fatalistic attitude is more common. The 'technological attitude' brings us to a major aspect of some of the contributions in this volume: do we wait for God to rescue us, or should we do it ourselves? How do we see human action in relation to the wider understanding of reality?

Last but not least, technology is more than devices and infrastructure, organization, skills, and attitudes. We live in a *technological culture*. Technology pervades and shapes our lives. Antibiotics, sewage systems, anti-conception pills, refrigerators, and central heating systems are more than new means. Antibiotics and sewage systems changed our sense of vulnerability (limiting enormously the number of parents who had to bury their own infants). The pill changed relations between men and women and between parents and their children. Thanks to the refrigerator and the microwave we can eat whenever it suits us, individually, and each according to his or her taste, and thus the common meal as a major characteristic of the day has lost significance. Central heating has made the common room with the fireplace less important; we can each spend our time in our own rooms in the way we like. Technology makes life easier and more attractive; with stereos and iPods, music is available without effort. Such developments were considered by the philosopher Albert Borgmann in his *Technology and the Character of Contemporary Life* (1984). His concern is that while consumption has become easier, some more demanding but meaningful and rich experiences are lost.

History of Technology as Cultural History

That technology and culture are intertwined can be made clear by considering the history of technology as cultural history, and not just as a history of inventions (e.g. Diamond 1998; McNeil 1990). In a sense, technology has made us human, just as tool making and the ability to make, maintain, and use fire are tied up with the emergence of our own species, including its social structures. In a more recent past, the transition from copper to iron some 1500 years bce changed social structures. Copper was relatively rare and thereby created an elite, whereas iron was more widely available and thus more democratic; iron, however, required a more demanding manufacturing process, which strengthened the emerging division of labor. Interaction between cultures revolved around trade, and thus with technologies of transport, production, and use. Agricultural technologies such as the domestication of animals, the improvement of wheat and other crops, and much later of farming tools such as the plow increasingly allowed for greater production with fewer workers, thus creating the opportunity for the emergence of cities.

In more recent European history, accurate timekeeping and the invention of the printing press may have been major factors in the transition from the medieval to the modern period. The Protestant Reformation made good use of the printing press, and in subsequent centuries, new labor relations arose due to the introduction of machines. Working with machinery owned by the master, installed at premises belonging to the master, was the beginning of the factory system. A good example can be seen in the shift in location of the production of textiles from the home to factories. When textile producers shifted from using water power, with locations spread out along the river, to coal, factories were concentrated close to the coalfields. In the absence of affordable passenger transport, workers had to live nearby, in houses they had to rent from their masters. Thus, we see the rise of the major industrial cities, with social arrangements such as regular working hours and standardization.

The steam machine and the 'railway mania' were followed by the freedom of internal combustion. What the car has done to social relations is enormous: for all commuters, the spheres of home and work were separated, and at the same time, the possibility for children to play safely outside was diminished. Controlling electrons in the late nineteenth century (telephone and electrical light) with subsequent developments in the twentieth century (radio and TV, computers and the Internet) added to the enormous cultural transformations of our time. As just one indication

of how quickly the developments are going: the very first 'www'-type of communication took place between two computers at CERN in Geneva on Christmas Day of 1990 (Berners-Lee 2000, 30).

The way we speak about technological possibilities influences our perception of what is happening. Talking about the Internet as creating 'cyberspace' suggests a new domain, floating free and remote from traditional human activities, as if we are starting all over with a new reality (see also the contribution by Karen Pärna, this volume). This language was severely criticized by Michael Dertouzos in an essay in 1981 (incorporated in Dertouzos 1997,11):

> The press and most soothsayers tell us we must prepare ourselves to enter Cyberspace – a gleaming otherworld with new rules and majestic gadgets, full of virtual reality, intelligent agents, multimedia, and much more. Baloney! The Industrial Revolution didn't take us into 'Motorspace'. It brought motors into our lives as refrigerators that preserved our food and cars that transported us – creations that served human needs. Yes, there will be new gadgets, which will be fun to use. But the point is that the Information Marketplace will bring useful information technologies into our lives, not propel us into some science fiction universe.

Technology also influences our self-understanding: who has never felt a 'huge pressure'? Do you occasionally need 'to let off steam'? These are images from the steam age. We may consider ourselves as made in God's image, but we speak of ourselves as if we were made in the image of machines. This is not exclusive to the steam age. The early radio receivers also left their traces in our language – we need to 'tune in' – and computers and the Internet are modifying our vocabulary and self-understandings right now. How do we appreciate new technologies: as opportunities, or as problems?

Technology: Liberator or Threat?

When technology is seen as a liberator, we may speak of technological *optimism.* We expect positive contributions to human lives from technology, contributions that will liberate us from various burdens and increase standards of living around the world. We expect a longer and healthier life, with more choices for the individual and more spare time as machines take over various tedious tasks, with better communication (e.g.

telephone and Internet) and more direct forms of democracy. There may be problems, for instance with the environment, but these problems can be resolved by technology. One should not idealize the past; we may want to camp outdoors occasionally, but we would not like to be cut off from modern medicine when needed.

Technology may also be seen as a *threat* to authentic human lives. Technology promotes uniformity and efficiency, undermines social networks, and increases the possibilities for tracing and manipulating individual behaviour. Earlier philosophies of technology, for example those of Lewis Mumford and Jacques Ellul, tended to be of such a more pessimistic kind. More recently, the Unabomber (Chase 2000) and Bill Joy from Sun Microsystems can be mentioned as adherents of such a view. The structure of their messages is often double, just as with messages on predestination or genetic determinism: we are unable to resist, but still we ought to resist. Technology is perceived as a force in its own right, with human behaviour, individually and collectively, following in its trail. This pessimism concerns not only what technological devices may do, but also how they make us look at problems, at fellow humans and at our selves. Technology has overtaken the way we think about ends and values.

Whereas optimism may be aligned with the tradition of utopian thought, we also have a dystopian tradition; there is, alongside the social utopia of Thomas More's *Utopia* (1516), the social dystopia of George Orwell's *Animal Farm* (1948) and, alongside the technological utopia of Francis Bacon's *Nova Atlantis* (1627), the technological dystopia of Aldous Huxley's *Brave New World* (1932). It has been argued, in my opinion convincingly, that the *technological* utopian dream has been far less disastrous in its consequences than the *social* utopian one (Achterhuis 1998); technology always has unexpected consequences, it may be used for other purposes, and it leaves one free to think and explore, unlike the desire to improve behaviour and attitudes, which deteriorates into one-sided control of humans.

A third view of technology, discussed with the other two (in Barbour 1993, chapter one), is more modest and less loaded with a positive or negative valuation. Technology may be seen *instrumentally* or *contextually*, emphasizing the human responsibility for design, deployment, and consequences. This view may be held naively or it may be more reflective, for example when design and use are subject of public discourse. Each context may have many dimensions, including incentives and inhibitions, desires, biases, and prejudices. In this volume we are not presenting technology as a liberator in itself, nor as a threat that happens to humans, but as a social domain where humans need to take responsibility.

Technological and Human Competences and the God-of-the-Gaps

A surgeon stands by my bed. She explains what they intend to do tomorrow. When she has left for the next room, the man in the bed beside me begins to talk. 'You know, my son was in medical school with her. When she had to do her exams, the professor said that she should have failed, but that he would let her pass just to be rid of her.' I am down.

A pastor stands besides my bed. She reads Psalm 139, words of trust and consolation. 'If I take the wings of the morning and dwell in the uttermost parts of the sea, even there thy hand shall lead me, and thy right hand shall hold me.' I see my life in the light of eternity. My mood goes up again. When she has left for the next room, my neighbor begins again. 'You know, my daughter was in seminary with her. When this chaplain had to do her exams, the professor said that she should have failed, but that he would let her pass just to be rid of her.' This does not bother me at all.

We demand professional competence from a surgeon, a pilot, and an engineer who designs a bridge, and rightly so. (The example of the surgeon was made up; it does not do justice to the professional responsibility of those who train doctors.) With the pastor, and in everyday human contact, the issue is not so much particular knowledge and skills. I depend on the surgeon; when she has not slept well, I am at risk. I no longer depend on the pastor; our conversation opened resources in myself (if adequate; sometimes, pastors and friends can also close such resources, and do more harm than good; read the book of Job in the Bible). The surgeon is, to speak religiously, a mediator who stands between me and my salvation.

In daily life we do *not* put our trust in prayer and pious words. When something needs to be done, we want an engineer, a doctor, a pilot: a professional who is competent in the practice at hand. Only when the doctor is unable to offer a hopeful perspective, some may be tempted to spend money on aura reading, powdered shark cartilage (in the Dutch pseudo-medical circuit a 'cure' for cancer), prayer healing, or whatever. When life becomes difficult we look for something to hold on to, but we prefer to begin with strategies that play by regular professional standards.

In conversations on religion and science, there is the critical expression 'god-of-the-gaps'. This refers to the tendency to focus on the holes in our knowledge, on limitations of our current understanding, and to assume that such gaps are where God is at work. Far more satisfactory, in my opinion, would be to see reality as we understand it as God at work. Emphasizing gaps is a risky strategy, like building upon ice; whenever we

become blessed with greater understanding, the role of any god-of-the-gaps will be diminished.

Not only in our dealings with science is there a god-of-the-gaps. In our dealings with technology we are also tempted to fall back upon a god-of-the-gaps. Occasionally with some gratitude, but often without paying much attention, we use the fruits of science and technology – antibiotics, electrical light, water drainage, computers, the anti-conception pill, and so on. When the doctor fails, when there is no cure yet, we fall back upon God or upon other elements from the rich treasury of (pseudo-) religious offerings. The expression 'god-of-the-gaps' may have its home in conversations on the theoretical side of science, where too many believers are anxiously looking for that which science is yet unable to explain. However, a similar danger arises in the context of the practical side of science – to look for God when our human skills still fall short of what we wish we could achieve. Introducing God when technology fails results in an instrumental type of religiosity; God is supposed to help us when we need help, but to keep out of our way as long as we do well.

Rather than the tendency to assume that the religious dimension comes into play when the engineers and doctors are finished, it seems preferable to appreciate the efforts of the professionals – and not only appreciate them commercially, but also religiously. When the computer in the plane or on the intensive care unit of the hospital fails, I hope that the staff of the service department will not pray 'that thou wouldst slay the wicked, o God' (Psalm 139: 19). We look to the engineers for our salvation. This is not to be seen as an anti-religious move, as we may appreciate their knowledge and skills as gifts of God, as possibilities to serve one's neighbor 'with all your heart, and with all your soul, and with all your strength, and with all your mind' (Luke 10: 27).

Playing God

Sometimes the concern is voiced that we go too far in our technological activities; we are 'playing God'. This metaphor has been used recently in debates on genetic modification and on cloning. Less than a century ago similar labels were used against those who put up lightning rods. Frederick Ferré tells the story of his father who, in 1922 as a young boy in a farming community of Swedish immigrants in the US, heard the preacher fulminate against the 'shiny spikes of faithlessness'. 'Thunderbolts were God's to hurl, not man's to deflect. The fires of hell, deep under the earth

on which the congregation now sat and quaked, were even then being stoked for those who insisted on rising in rebellion against God's will by installing newfangled lightning rods. Amen.' Even if one would have no doubts about hellfire, there seems to be something deeply problematical about such a sermon. 'Could God's will truly be foiled by a steel rod and a grounding wire? Was it really wrong to protect family and livestock from the storms that swept in from the prairies with such seemingly undiscriminating force? ... Should he believe that the God Jesus called "our Father in heaven" really would punish farmers for taking whatever meager technological precautions might be available?' (Ferré 1993, 27).

Why would even non-believers find 'playing God' a useful metaphor in criticizing new technologies? The American philosopher Ronald Dworkin suggested in *Prospect Magazine* in May 1999 that this is because those new technologies do not merely raise ethical issues, but create insecurity by undermining a distinction that is vital to ethics. Underlying our moral experience is a distinction between what has been given and what our responsibility is. What is given is the stable background of our actions. We cannot change those issues. Traditionally this has been referred to as fate, nature, or creation: domains of the gods or of God. When new technologies expand the range of our abilities, and thus shift the boundary between what is given and what is open to our actions, we become insecure and concerned. It is especially in such circumstances that the phrase 'playing God' arises. There is a reference to 'God' when something that was experienced as given, not up to our choices, becomes part of the domain of human considerations. We accuse others of playing God when they have moved what was beyond our powers to our side of the boundary. The fear of 'playing God' is not the fear of doing what is wrong (which is an issue within the domain on our side of the boundary), but rather the fear of losing grip on reality through the dissolution of the boundary. Dworkin argues that this fear is not necessary; humans have always played with fire, and we ought to do so. The alternative is, still according to Dworkin, an irresponsible cowardice for the unknown, a weak surrender to fate.

New technologies imply a different range of human powers, and thus a changing experience of fate, nature, creation or God. For instance, *if* God is associated with that which has been given – often identified as 'creation' – our technological activity will be perceived as pushing God back into the margin. Antibiotics and anti-conception have contributed more to secularization in Western cultures than Darwin; practices are more important than ideas. This God who is pushed to the margin is a god-of-the-gaps, as considered above.

Going beyond the Given: Technology and Religion

If we do not accept this god-of-the-gaps, then how should we proceed? Theism with its root pair of metaphors of power (on the side of the transcendent God) and dependence (on our side) is challenged to rethink itself in the light of the powers we have acquired. If we draw upon the Christian heritage, we find a variety of attitudes.

Stewardship may be interpreted as a call to conserve this world, which then is appreciated as the best of all possible worlds, just as in arguments of traditional natural theology (see Brooke and Cantor 1998). However, in the biblical traditions, God is also associated with a vision of a kingdom of peace and justice, a city of light and glory, where death will be no more. Images of redemption and liberation are integral to the Christian understanding of God. In this light, humans are not merely stewards who are to keep and preserve what has been given. Humans are also addressed as people who should abandon their old ways and take up the risk of living in a new way, as witnessed by the narratives on the Exodus and on Pentecost. Humans are called to renew themselves and the world.

Since the very beginning of the Christian tradition (as the first major heresy, that of Marcion, testifies) there has been a tension between the focus on God as creator – and thus on the world as a God-given created order – and on God as the gracious, loving father of Jesus Christ, who longs for the renewal of the world. Distrust of technology springs from emphasis on what has been given; in contrast, technology could be part of the Christian calling. Additionally, to shift to a naturalistic vocabulary, morally sensible 'naturalists' might share this responsibility by not emphasizing the given as normative, but thinking through the possibility of improving the natural.

Preview

Our lives will change, for better or for worse. And so will our ideas and practices. We are not merely bystanders, but may contribute to this development. Biotechnology and ecological problems are contexts within which these developments are clearly visible in our time. This interplay of technology and tradition, of ecology and religion, of self-understanding and moral vision is what the essays in this volume are about.

The essays in part one of this book address our technological human condition. **Bronislaw Szerzynski** sets the tone by speaking of the religious

roots of our technological condition. Technology is not some development by itself; its rise to prominence relates deeply to our values, our notions of nature, of the secular and of transcendence, as he argues, in the light of human history. **Taede Smedes** goes even farther back, to the early evolution of humans, but in the same article speaks of us as cyborgs, that is, organisms which have technology (cybernetics) built into their existence. **Karen Pärna** speaks of technophilia, the love of technology, in the case of 'the Internet age' – again, not just a practical technology, but a new context for religious dreams and meanings.

The second part deals with religious resources that people appeal to in relation to ecological concerns. **Tony Watling** gives an overview of the multiple ways humans have appealed to religious traditions of East and West and to scientific insights such as the 'Gaia theory' to re-imagine the human situation and role relative to nature. **James Miller**'s analysis of the role of Daoism in China's quest for a sustainable future provides an in-depth example of such an appropriation of an ancient religious vocabulary in relation to modernization and in relation to ecological challenges. **Francis Kadaplackal** addresses the issues in a Christian context. His main focus is on the idea of human nature, drawing on the classical *imago Dei* concept and a more recent 'created co-creator' designation to speak of human embeddedness, freedom, and responsibility. **Forrest Clingerman** considers a variety of approaches, and speaks of a 'theology of nature' as well as of 'religious naturalism'. The main focus is, however, not on these positions but on the preliminary question of how one comes to such positions, and what may be expected of religious or secular schemes. Thus, he speaks of the way we build religious models, in this case models of nature, that have sufficient depth of meaning to serve us well descriptively as well as prescriptively – conceptualizing our place as well as our responsibilities.

The third part deals with biotechnology as a context in which similar questions regarding our values and visions arise. **Frank Kupper** reports on public debates on animal biotechnology, and thus addresses the fundamental issue of how discussions on sensitive issues can be organized such that the various voices are heard. Their methodology, 'the value lab', seems able to explore value diversity. **Michiel van Well** considers another Dutch debate, on genetically modified (GM) food. Following Martijntje Smits, Van Well interprets concerns about GM food with categories drawn from religious studies, such as concerns about purity (Mary Douglas) and the danger of monsters. Humans, and especially the possibility to extend the human lifespan, are the topic of **Peter Derkx**'s contribution. How do those possibilities extend with views on meaning and fulfillment,

and what moral issues of distributive justice arise in terms of access to life-extending technologies? **Annika den Dikken** considers not extension but enhancement technologies in relation to ideas on care, suffering, and limitations. An ethos of care will remain of utmost moral importance, even if we accept more enhancement technologies.

In the fourth part, the focus continues on the public debate around these issues. What role might religious arguments have in a pluralistic democracy? **Patrick Loobuyck** draws on modern political philosophy, where calls for the exclusion of religious arguments as too particular have been countered by arguments for weaker or stronger forms of inclusion of such expressions of values and concerns. The contribution by **Olga Crapels** focuses on experts and lay people in public debates. Is there a knowledge deficit on the side of lay people involved in public debate on new technologies? Or are the experts insufficiently attentive to the values articulated in religious or other ways? **Franck Meijboom** takes up a similar issue of trust in relation to the acceptance of new technologies, for instance food technologies. **Nancie Erhard** considers the dynamics of multi-faith alliances, through which lay people are politically engaged in a secular democratic society and explores how these could contribute to the larger issue of human engagement with new technologies and the ecological challenges of our time.

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Part One

OUR TECHNOLOGICAL HUMAN CONDITION

1   The Religious Roots of Our Technological Condition[1]

Bronislaw Szerszynski

Religion, Environment, and Technology

The relationships between religion, technology, and the environment are at least as important now as they were when Lynn White published his seminal essay 'The Historical Roots of Our Ecologic Crisis' in *Science* about forty years ago – an essay to which my own title is, of course, an homage (White 1967).

For a start, *religion*, far from fading away as theorists of secularization would have us believe, seems to be becoming more significant than ever, even more so than when Peter Berger published the collection *The Desecularization of the World* in 1999 (Berger 1999). For example, the events of the last years have seen various forms of Islam become hugely significant forces in world affairs; in the US, too, the influence of religion on politics was felt throughout the Bush administration; there is growing awareness of the numerical significance of the global south in Christendom, especially due to conflicts within the Anglican Church over gay priests – an estimated two-thirds of the world's Christians live in Asia, Africa, and South America; and there is a growing awareness of how even apparently secularized Western societies contain an extraordinary range of alternative spiritualities (Heelas et al. 2004).

Similarly, the *environment* too is now moving back up the political agenda: global climate change is becoming more recognized as a reality rather than a hypothesis; the spectre of 'peak oil' is prompting a revival of interest in issues about resource depletion; economic growth in China and India is raising the question of how the spread of Western-style levels of consumption can be supported by an increasingly overstrained planet.

Against this background, there is, understandably, increasing policy interest in finding new ways of changing people's behaviour to reduce ecological footprints, in areas such as energy and water use.

It is perhaps worth dwelling on this last point a little. The seasoned environmental campaigner Tom Burke has recently suggested that environmental politics is moving into a new and more challenging era.[2] For its first few decades, Burke argued, environmental politics was primarily concerned with issues such as air and water pollution, hazardous wastes, toxic chemicals, and radioactive substances, issues in respect of which there was a clear case for action, there were obvious courses of action to take, there were more winners than losers when action was taken, and there were easily identifiable victims and villains. However, with what he calls the 'hard politics' of the environment that we are now having to tackle, in relation to issues such as climate change, deforestation, ocean degradation, water scarcity, food insecurity, and biodiversity loss, the case for action is not always clearly perceived and the policy tools are far less obvious. If action is taken, there are more immediate losers than winners: it is far more difficult to find win-win solutions, and the victims and villains are often the same people in different roles, such as citizen and consumer.

This hard politics of the environment will require institutions to find radically new modes of intervention, ones that involve not pulling a few big regulatory levers, but influencing the micro-texture of human behaviour, shaping billions of unreflexive micro-decisions distributed across the social fabric. In such a context, it would not be surprising to see a renewed interest in using religion to help meet conservation goals. In September 1986 the World Wildlife Fund organized a two-day retreat for leaders of world religions in Assisi, Italy, to mark its twenty-fifth anniversary, a meeting that led to the Assisi Declarations on ecology from the major world religions, and to the creation of the Network on Conservation and Religion. It is said that Prince Philip, the president of the WWF, initially came up with this idea largely because of the numerical and hierarchical power of the world religions to shape human behaviour. Such moves might seem less likely twenty years later, in an increasingly globalized world, one in which modern society, as Zygmunt Bauman puts it, is turning from solid to liquid – from a society organized through communities, institutions, and certainties to one of individualization, mobility, and uncertainty (Bauman 2000). But, ironically, in the broader context of globalization and neo-liberalism, many states, stripped of conventional regulatory levers with which to control their territories, are indeed start-

ing to turn to 'faith groups' for the delivery of policy objectives. So it should not surprise us to see bodies like the UK Sustainable Development Commission exploring the role that faith leaders and faith communities might play in advancing sustainable development objectives (SDC 2005). We could see religion increasingly turned to as a possible way of achieving the massive behavioural change needed if we are to avert mounting ecological problems.

Technology is of course of huge significance in policy debates – particularly in those parts of the world that, like the European Union, are currently under the thrall of a particular political-economic imaginary, that of the knowledge-based economy, which sees future economic prosperity as depending on a continuous technological innovation underpinned by high investment in research and development, in order to prevent any temporary high-technology advantage evaporating as developing world economies 'catch up'. And under the influence of this imaginary, when the public fails to welcome new technologies enthusiastically, this is typically seen as a kind of failure of nerve which threatens economic performance. One thing that has been particularly striking in the policy discourse since the EU agreed on its Lisbon Agenda in 2000, which committed it to the goal of making Europe 'the most competitive knowledge-based economy in the world by 2010,'[3] is the way that the European public is repeatedly cited as one of the reasons for not meeting the targets towards that goal, with European resistance to the introduction of genetically modified organisms (GMOs) into European agriculture and food an oft-cited example. For example, the 2006 Aho Group Report, *Creating an Innovative Europe*,[4] lists as one of the key actions necessary for meeting the challenges of globalization 'fostering a culture which celebrates innovation'. It argues that:

> Europe must break out of structures and expectations established in the post-WW2 era which leave it today living a moderately comfortable life on slowly declining capital. This society, averse to risk and reluctant to change, is in itself alarming but it is also unsustainable in the face of rising competition from other parts of the world (Aho et al. 2006, 1).

Whether explicitly or implicitly, religion is often invoked as part of this anti-innovatory culture. Religious opposition to medical biotechnology such as stem cell technology has, of course, been particularly prominent amongst Catholics and Evangelicals in the US. By contrast, much less of the opposition to agricultural biotechnology has been explicitly religious-

ly motivated,[5] though it is interesting that Lord Robert May, formerly chief scientific advisor to the UK Government and president of the Royal Society of London, recently described European opposition to GMOs as 'theological' in nature – meaning presumably that it was not grounded in empirical proof of harm, but in less tangible, even metaphysical concerns over what DNA technology might signify. And, given the *schadenfreude* with which the UK biotechnology sector has viewed the slowing down of stem cell research in the US, we can surely expect other cases in which religious beliefs are seen as an exogenous brake on the seemingly 'natural' process of technological innovation.

So it is not only the case that the three terms on which I will be focusing in this chapter – 'religion', 'environment', and 'technology' – are each of significant interest in public discourse; we can also see that links are starting to be made between religion and environmental policy, and between religion and technology policy. But note that, whereas in terms of environmental policy, religion is often seen as part of the *solution*, when it comes to economic strategy, religion is more often seen as part of the *problem*. I want to argue that common to *both* sides of this contrast is an unhelpful assumption about the relationship between religion, science and technology. I can perhaps best indicate what I mean by looking more closely at these framings of religion as tool and as impediment, in turn.

On the one hand, with the enrollment of faith groups in the promotion of environmentally benign lifestyles and practices, there is a danger of religion being instrumentalized. In 1992 Robin Grove-White and I published an article warning against the use of values and beliefs simply as non-rational determinants of behaviour that can be manipulated through public policy instruments in order to gain policy objectives (Grove-White and Szerszynski 1992). According to this instrumental view of religion, and of values more broadly, the task is to identify which religious or secular world views are ecologically 'destructive' and which are 'benign', and to find ways of discouraging the first and encouraging the latter. In our paper we suggested that this is an ultimately technocratic project – as if science can tell us how we should live, what our goals should be, and then values are only manipulated to achieve those goals. Much literature in the religion and environment area is still vulnerable to that critique, often because it takes for granted the account of nature offered by science, thus making the sacred subordinate to the secular. It yokes religion into the service of the technical administration of the earth's life processes as understood by science, instead of seeing religion and values as involving the inquiry into what is valuable in the first place.

On the other hand, in the case of technological innovation, there is an equal but opposite danger of religion being positioned not as a useful instrument but as an annoying hindrance. In the imaginary of the knowledge-based economy, an extraordinary emphasis is placed on one particular aspect of what Gilbert Simondon (1958) called the 'mode of existence' of technological objects – their capacity to mutate, combine, and diverge into new forms. In short, within this discourse, technology is all but synonymous with *new* technology, and technological change is seen as an absolute good. Furthermore, technological innovation is understood as a process which is driven by knowledge processes purely internal to the world of science and engineering; the world of culture, religion, and public meanings is only relevant as a realm of potential reception for the technological products produced by the world of technology and commerce. The public, with their meanings and values, are thus relegated to a passive role, that of simply welcoming, and adapting to, these new arrivals in the family of created beings.

These two worries are at once diametrically opposed and intrinsically connected. First, how can we overcome the enchantment which scientific and technical accounts of nature hold over environmental politics, both secular and sacred? How can we create and defend an intellectual space for religious ideas to have more than a purely instrumental role in environmental politics? Must religion be relegated to simply offering new reasons *why* we should behave differently to nature, rather than offering anything new concerning *how* we should behave? Second, how can we counter an understanding of technology as an inevitable, autonomous process, which positions culture and meaning as on the outside of that process? And, specifically, can the promissory nature of modern technological development *itself* be subjected to a religious analysis? In the rest of this chapter I will argue that the first step in thinking through *either* of these challenges is problematizing the idea of the ontological primacy of the secular.

The Critique of the Secular

In 2005 I published a book on this topic, *Nature, Technology and the Sacred* (Szerszynski 2005), and one of the main contributions I hoped it would make to the literature on the relations between religion, environment, and technology is as an exploration of the religious roots of the apparently secular cultural meanings that underpin and sanction the modern domi-

nation of nature. In this, the book was influenced by the argument made by the postmodern theologian John Milbank in his *Theology and Social Theory* (1990). Milbank sought to turn the tables on secular accounts of human beings and of society, suggesting that, rather than understanding religion as a distinctive cultural phenomenon within a fundamentally secular world, it is the *secular* we should problematize, understanding it as a historically contingent cultural development within a fundamentally religious cosmos – and, most importantly, that the modern secular can never shake off its origin in, and dependency on, specific religious ideas.

Milbank suggested that this has profound implications for the way we think about modern society. In particular, religious discourse, rather than being one which is open to being explained by reference to secular realities such as psychology, interests, or ideology, becomes a kind of master discourse – once again theology is the queen of the sciences. In my book I take Milbank's basic idea (without necessarily taking on board his specific normative commitments) and extend it into the areas of our relationship with nature, especially as mediated through science, technology, and environmental politics – and argue that it has equally profound implications here.

Let me explain the Milbankian move in a little more detail. Modern thought is dominated by a particular picture of the relationship between the sacred and the secular. Firstly, the secular is understood as a self-dependent reality, one might say a self-evident reality – a world full of empirical beings, both animate and inanimate. The particular sacralizations offered by the religions of the world are then seen as cultural meanings which supervene on this shared, secular reality that is described by the empirical sciences. Here, the secular is the 'unmarked' term, the side of the secular/sacred contrast which is in no need of explanation. Secondly, seeing the world this way, understanding the natural world in terms of cause and effect, through physics, biology, and chemistry, and understanding human beings through sociology, psychology, and economics as mortal, rational animals driven by a combination of animal instinct and rational calculation, is seen as a universal form of thought that was always waiting within human history as a potentiality – indeed the destiny – of humankind.

Instead, we need to see the modern secular world as a peculiar and distinctive product of the religious and cultural history of the West, and as inextricably shaped by its religious roots. Originally, the concept of the profane presupposed the sacred; conceptually, they operated as a pair, with the contrast between them only relative, and one that could be

switched around as a person moves through different life stages and circumstances, so that he [*sic*] 'one day sees the sacred where before he has seen the profane, or vice versa' (Van Gennep 1960, 13). In its original sense in the Classical world, the profane or worldly was thus *itself* understood religiously – indeed, the Latin term *pro-fanum* originally referred to the space in front (*pro*) of the temple (*fanum*) (Gadamer 1975, 150).

Yet modern secular thought and action understands itself as secular or profane in an *absolute*, not a relative sense – not as a pragmatic relaxing of sacral norms, or as heresy, idolatry, or apostasy within a shared sacral horizon, but as purely *non*religious, to be understood in its own, immanent terms, with no need of any sacral reference point to make it intelligible. One way I have described this move is to say that with the onset of modernity the world was turned inside out; once, the secular was simply a space within a sacral horizon, within a world understood in sacral terms; now, our cosmic horizon is secular, and sacrality, belief in religion, is understood as a phenomenon within that secular horizon. Indeed, I have suggested that this turning inside-out of the world is the reason we find it so hard to define religion. The secular, we can define. Religion, we can't; we can't find any core characteristics that are shared by everything we think of as religion, but not by anything we think of as secular. Any definition of religion either casts the net too widely, or too narrowly. And this, I suggest, is because the concept of religion is a *political* term. Before the elevation of the secular to constituting the horizon of our world, there was no such thing as religion in the modern sense; the category emerged as the result of an extraordinary piece of cultural labor, a gathering together of a huge range of phenomena, ideas, and practices, an immense othering performed by emerging secular modernity, as the vast and incommensurate panoply of beings, ontologies, and practices that once existed *outside* that space were herded into the space that has come to be called 'religion' (Szerszynski 2006, 813-16).

The Secular and Nature

So, what are the implications of applying this sort of approach, one that rejects the ontological priority of the secular, to the domination of nature? In my book I explored this through a critical reinterpretation of the idea of the 'disenchantment of nature' – the idea that in the modern era nature has been disenchanted, stripped of sacral meaning, rendered calculable and manipulable. This idea, most famously formulated by the sociologist

Max Weber as *die Entzauberung der Welt* (Weber 1989, 14, 30) has a long history, indeed is as old as modernity itself. This, I suggested, is the 'creation myth' of modern society, told in order to justify modernity's sense of its own exceptionality, its discontinuity with earlier, 'traditional' cultures, its wiping the slate clean so as to start afresh (see Toulmin 1992). But a more-or-less standard version of this narrative also runs through the literature on religion and the environment. So, both those who see modern rationality and technology as liberating forces, and those who see them as a source of profound alienation, generally accept that nature has become disenchanted – that the way nature is understood underwent a decisive break with Western religion.

My suggestion in the book is that the story of the disenchantment of nature is only a half-truth. It is *true* that the dominant way that nature is understood was transformed in the seventeenth century. It is *true* that nature is no longer understood as being filled with gods, demons, or spirits who might assist, hinder, or terrify us. Nature is no longer shot through with occult connections between one object and another. Neither is it any longer seen as one of the two books of God,[6] filled with signs and lessons for human beings from its creator (though with the rise of molecular biology with its idea of genetic codes and commands, that metaphor has seen a bit of a renaissance).

Instead (and here I am grossly simplifying the modern view of nature), today nature is mathematical – something to be counted, measured, and mapped. Nature is immanent – it operates according to its own internal processes, rather than being shaped or guided by a supernatural hand. It is mechanical – behaving according to cause and effect, not seeking teleological goals. It is a resource – to be owned or held in common, to be used or preserved. It is to be understood through careful observation and scientific theory, not through mythology or divination. This is a nature whose being is mastered by science, whose value is measured by economics, and whose potentiality is determined by technology.

So I grant that, and some. But this is not because nature has been *stripped* of meaning, somehow rendered bare, rendered how it has always been, no longer hidden from view by the consolations of religion. On the contrary, the natural world has been *filled* with particular cultural meanings – and it is at least as important to interrogate *those* cultural meanings as those which we think might hold technology in check.

Of course, something like this idea was already present in Lynn White's essay (1967), as he suggested that the domination of nature arose in Western Europe because of the particular theological ideas of Western Chris-

tianity. But what was dominant in White's paper and the subsequent literature was the idea that Christianity simply permitted something which was being held back by religious ideas – that Christianity banished the spirits from nature, and thus removed taboos against its exploitation. Implicit or explicit in this literature has been the idea that the reason *why* in the past humans enjoyed less exploitative relations with nature (although it is not always agreed how far back we have to go) was because they had religious beliefs about nature that acted as a constraint on their technological domination of nature: for example, the belief that nature is alive, that nature is God's body, or that it is full of spirits. The implication here is that once these beliefs are removed, and you move thereby to a secular understanding of nature, then the latent technological attitude is somehow introduced. To use a metaphor with which I open my book, it is as if in the modern world religion simply recedes, like the sea of faith in Mathew Arnold's poem of the same name, leaving a denuded, unprotected nature.

Instead, in the book I develop the argument that, in modernity, nature is not disenchanted but is held under a different enchantment; not stripped of meanings, but has been *filled*, *constituted*, through particular meanings. I draw on religious studies, history, anthropology, philosophy of technology, and empirical sociology to suggest that contemporary society is characterized by not so much a disappearance as a *reorganization* of the sacred, and that contemporary ideas and practices concerning nature and technology – whether associated with the technological exploitation of nature, or with resistance to that exploitation – remain closely bound up with religious ways of thinking and acting.

Western Religion, Nature, and Technology

So, part of my argument is that the modern scientific view of nature takes shape within the womb of Western religion. To summarize the argument I developed in *Nature, Technology and the Sacred*, Western thought has passed along a highly distinctive historical trajectory through its two millennia of transcendental monotheism, one without which our modern ideas of nature and technology would not take the form that they do. In contrast to the unified cosmos of primal religions, this trajectory saw the establishment of a vertical, transcendent axis in thought and cosmology, one that divided that cosmos into an empirical world and a transcendent, other-worldly reality. As this axis emerged, the supernatural powers of ancient divinities were progressively gathered together into the idea of the

monotheistic God, and expelled from the empirical world into a supernatural reality. This axis, along with its correlate in the philosophical reason of classical Greece, established a new dimension in human experience which had a profound impact on ways of thinking about the world. Without such an axis it would not have become possible, as happened later, to regard nature as *nature* – as a unified secular realm, the laws of which can be discovered through empirical inquiry, and which can be manipulated technologically.

But central to this story is also the *radicalization* of this axis in the Protestant Reformation and the scientific revolution. The Reformation stripped away the institutional and supernatural hierarchies that both constituted and spanned the gulf between the transcendent divine and the world, making that gulf at once infinite and infinitesimal, absolute and vanishingly small. With the divine's even more absolute removal from this world, it became apprehended under the figure of the *sublime* – as infinite, unconditioned, and unknowable. But at the same time as the Reformation radicalized the gulf between the empirical and transcendent worlds, the transcendent was also brought close to each individual, and to nature. Then, with the emergence of modern thought, the transcendent axis was pulled into the very empirical world that was constituted by its ejection, and both the human subject and the natural world came to take on attributes that had previously been assigned to the divine (Szerszynski 2005, ch. 2).

So, rather than the emergence of modern science in the seventeenth century being a decisive event in the *separation* between religious thought and natural philosophy, it was the moment of a spectacular *fusion*. The scientific revolution did not simply jettison God; rather, its proponents drew their sublime and distant God even closer, into the empirical world, and in doing so changed the meaning of theological language. In order to carry out their project of reconfiguring the human understanding of nature to make it capable of mathematical certainty, figures such as Descartes, Newton, More, and Leibniz took language about God's attributes, being, and action in the world, stripped them of what medieval theologians such as Aquinas had seen as their analogical character, gave them clear, univocal meanings, and progressively absorbed them into their emerging account of the empirical world (Szerszynski 2005, 48). Thus the modern scientific idea of nature was born through a particular transformation of theological discourse, although these theological roots become progressively obscured as decades and centuries passed.

The emergence of this new understanding of nature was closely linked with that of modern technology (Heidegger 2003). For classical think-

ers, *techne* – craft, or art – provided an inferior kind of knowledge than that promised by contemplation, because of its concern with particulars rather than universals, and with changing rather than unchanging things. Individual crafts were regarded as intrinsically uncertain and unpredictable in their outcomes, partly because of an almost animistic classical conception of matter as having its own desires, its own *telos*. The process of manufacturing an object, of combining form with matter, involved not just imposing a form on matter but cooperating with matter, almost conversationally, so was not reducible to formal principles and had to be learned through experience (Mitcham 1994, 118-23). Crafts were thus tentative, quotidian activities located in the context of non-technical understandings of human flourishing which incorporated ideas of beauty, justice, and contemplation.

But after the Reformation we see the rise of 'technology' in the modern sense as a project of reducing the arts to universal methodological principles – of finding the *logos* of *techne* itself, of overcoming the recalcitrance of matter and making it subservient to *logos*, thus bringing human activity into the realm of 'clear, voluntary and reasoned concepts' (Ellul 1964, 20). The idea of a transcendent God provided an Archimedean vantage point outside the empirical world at which the experimental scientist sought to stand to gain objective knowledge of the world, knowledge untainted by the perspectivism suffered by empirical creatures dwelling within the world (Arendt 1958, 257-68). In this new ordering of nature and technology, *Homo faber*, the human as fabricator, is no longer one who co-operates with matter as another creature with its own desires and goals; instead, he acts on it from outside, yet as one who knows it more intimately than it does itself, as if he were its creator.

So the quintessentially modern idea of 'technology' emerged as a fusion of craft practices with ideas from transcendental monotheism, effecting a radical transformation in ideas of knowledge. But this emergence also radically changed the meaning of the practical arts. From Francis Bacon's *Advancement of Learning* ([1605] 1960) onwards, technology became conceived as a project to liberate humankind from finitude and necessity, allowing it to share in the unconditionedness of a deity understood in increasingly sublime terms (Noble 1999; Song 2003). Modern technology was thus framed from the outset as a soteriological project. Initially, the technological relation with nature came to be seen not just as a way of easing the human condition, but as a way of radically transforming it, of returning to the prelapsarian condition of ease and harmony between humans and nature – ultimately, as a fusion of art and reason, of *techne*

and *logos*, which promised to bring the certainty of reason to humanity's technical dealings with matter. But with the later loss of a supernatural reference, the ends and purposes of this technological project come to be understood in purely technical ways, as requiring the adaptation of the human to technological imperatives. Technology became measured against neither quotidian nor supernal human needs and interests, but against its own, technical criteria. Technology became the measure of man – became autonomous, became sublime.

Conclusion

I started this chapter by talking about the importance of religion, environment, and technology in contemporary public discourse. All three, for different reasons, are of importance in policy discussions; but also, I suggested, connections are increasingly being made between them. In the case of the environment, I suggested that there are signs that religious beliefs and what are called 'faith groups' are being enrolled in the difficult task of effecting radical behavioural change in order to meet environmental targets. Regarding technology, I commented on the way that technology policy tends to construct public beliefs and values such as those labelled 'religious' as an impediment to the acceptance of new technologies, and thus to economic productivity and competitiveness in the knowledge economy. I suggested that *both* constructions of religion – as tool or as impediment in relation to secular goals – were equally unhelpful, and rested on problematic assumptions about the relationship between the secular and the sacred. I then sketched an argument that problematized the idea of the ontological primacy of the secular, arguing in particular that modern, secular ideas of nature and technology are profoundly shaped by the religious history of the West.

What are the implications of this move for debates around religion, environment, and technology? Firstly, it implies a rather different picture of the role of 'religious' voices in critical debates about environmental and technological priorities than the dominant picture; rather than referring to scientific and technical definitions of environmental problems and technological effects, and purely remaining at the level of 'values', critique should involve exposing and engaging with the theological roots at the very heart of modern science and technology. The anthropologist and philosopher of science Bruno Latour has recently called for a 'secularization' of Science (with a capital 'S') – the abandonment of science's mythi-

cal claim to have privileged access to objective truth (Latour 2004, 30-1). He suggests that the sciences (with a small 's'), the particular, fallible ways we have of generating knowledge about the world, need saving from this myth, not least so that we can dispel the dangerous illusion that scientific knowledge-making can, and should, ever be insulated from politics and debate. Latour calls this 'secularization' to indicate that this would be a removal of science's transcendental epistemic privilege, bringing it down to the level of the world, and leveling the terms of engagement between science and politics. Yet, ironically, this very secularization of science could also facilitate a more productive engagement between science and *religion*, by bringing to the level of conscious reflection and debate shared and conflicting theological assumptions about time, finitude, matter, and human epistemic powers.

Secondly, the distinctive temporal structure of contemporary technology, its promissory and autonomous character – at once promising humanity progressive liberation from the limits of finitude, and requiring humanity to be subject to its dynamic – cannot solely be analysed in terms of the institutional organization of contemporary science and technology, but also requires us to see how the meanings of nature and technology have been conditioned by religious ideas. The promise of science and technology to enable humans to transcend the limits of creaturely existence has emerged out of a cultural history profoundly shaped by transcendental monotheism and associated ideas of salvation. This was by no means a necessary development; the emergence of what I have been calling the technological condition depended on a contingent transformation in Western religious and intellectual ideas associated with the Protestant Reformation and the scientific revolution, which relied on a highly voluntarist image of God imposing his will on passive matter without remainder. Such ideas closely link together issues of epistemology, ontology, technics, and social power, as is very evident in the hopes pinned on contemporary biotechnology. Witness the similar rhetoric deployed by succeeding generations of social actors as traditional plant and animal breeding has been overtaken by scientific Mendelian breeding, then by genetic modification, and most recently by the promise of the biological engineering being pioneered at MIT.[7] In each case, the 'promise' of the new technological paradigm has been the introduction of unprecedented levels of certainty and control in the production of traits and functions. As Lily Kay comments in relation to the rise of molecular biology as an industrial paradigm in the twentieth century, '[t]here is seductive empowerment in a scientific ideology in which the complexities of the highest

levels can be fully controlled by mastering the simplicity of the lowest' (Kay 1999, 17, 18). An exposure of the substantive theological assumptions that underlie such dreams of control, and equally underlie the elevation of the technical as the highest form of knowledge, can play an important role in 'humanizing' technological development, so that we can begin to see alternative technological futures, grounded in very different social imaginaries and theologies.

Notes

1   Many thanks to Brian Wynne and Larry Reynolds for conversations which have greatly helped me formulate parts of my argument.
2   http://www.tomburke.co.uk/docs/GA250205TXT[1].doc. The concept of the 'easy' and 'hard' politics of the environment was developed in an earlier article (Burke 1997).
3   http://ec.europa.eu/growthandjobs/index_en.htm
4   http://ec.europa.eu/invest-in-research/action/2006_ahogroup_en.htm
5   But see the essays in (Bruce and Bruce 1998) and (Deane-Drummond and Szerszynski 2003).
6   Acccording to many of the Church Fathers, nature, like the Bible, was a book through which God reveals his glory and his commands to us – see Tanzella-Nitti (2005).
7   See http://www.guardian.co.uk/science/2005/mar/10/science.research.

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2   Technology and What It Means to Be Human

Taede A. Smedes

Introduction: Technology and Nature

Sitting in my study, looking around me, all I see are human-made items – artifacts such as books (lots of them), book shelves, a computer and a PDA, a desktop lamp, pens and pencils, and so on. When I look out my window, I see houses, but also gardens with plants and trees. Plants and trees are generally regarded as natural phenomena, yet the way they are planted as parts of the town in which I live is purely artificial. As far as I can see, except for the blue sky and the sunshine, there is nothing in my direct vicinity that is not, in some sense, the product of human design and engineering. I am an inhabitant of what I term the *technosphere* – a place that itself is an artifact, designed and technologically manufactured by humans. Even more, there is hardly a place on earth that is not in some way touched by human influence.

For many people, the influence of humanity in and upon nature is something that should be kept to a minimum as much as possible. Human influence on nature, especially involving technology, is somehow considered to be 'unnatural'. The way many people speak about the relationship between humans and nature is as if humans are not part of nature; as if humans are somehow above or against nature, so that human actions that affect nature are 'interventions'. Nature – traditionally a very slippery and vague concept – can in this context be described as that which develops by itself without the interference of humans. This concept of nature also seems to be tacitly present in many discussions concerning conservation of natural habitats: humans have to take a step back and should not interfere. Nature should be able to take care of itself.

This is a strange and even paradoxical situation. On the one hand (and I will say more about this later), Darwin's evolutionary theory in a sense destroyed the dualism between humanity and nature. The ascent of humans was just as much a natural process as the evolution of fishes, insects, birds, and so on. As Michael Ruse (1986, 104) describes,

> If you take Darwin seriously – accepting evolution through natural selection and not merely some Spencerian bastard version of evolution – then the special status of *Homo sapiens* is gone forever. Any powers we have are no more than those brought through the crucible of the evolutionary struggle and consequent reproductive success. It is true that, as a species, we are unique, with our own special combination of powers and abilities. But then, so also is *Drosophila melanogaster* (a species of fruit fly).

Darwinian evolutionary theory (most recently in the form of sociobiology) has shown human culture to be just another dimension, or even product, of biological evolution. Yet in many discussions concerning the relationship between technology and nature, human influence is still considered to be somehow unnatural, or not part of natural processes.

This deep ambiguity is especially prominent in discussions concerning the human use of technology. It often seems as if the technosphere (as the realm of human technology) is not a part of the biosphere, but is a separate realm or layer. This view, of course, has deep roots, going back at least to the Puritan tradition that followed Francis Bacon, who in his *Novum Organum* (1620) foresaw technology as a means of regaining a lost paradise. Bacon's ultimate goal with technology 'was to redeem man from original sin and reinstate him in his prelapsarian power over all created things' (Paolo Rossi, quoted in Noble 1997, 50). The philosopher René Descartes wrote in his *Discourse on Method* (1637) that, through science and technology, 'we might be able … to use [the actions of fire, water, air, the stars, the heavens, and all the other bodies that surround us] for all the purposes for which they are appropriate, and thus render ourselves, as it were, masters and possessors of nature' (Descartes 2000, 4). John Milton, in his *Paradise Lost* (1667) argued that humans with their mechanical arts and science would have dominion over nature. The view that science and technology are meant to give humans dominion over nature has since then become a deep-seated view of the relationship between humans/technology and nature.

One example: the historian Thomas Hughes writes that early American settlers believed they were called to create the Promised Land for them-

selves, which meant taming the wilderness they found when they arrived in America. The view that humans stood against a wilderness they needed to tame and control became entrenched in the American mind. Americans in the nineteenth century 'conceived of the transformations wrought by technology as a manifestation of mind over matter. ... Full of self-satisfaction, they believed that the human mind was ordering chaotic nature, a wilderness, into a world of enlightened culture' (Hughes 2004, 29f.). In effect, 'Americans would become the lords of creation. Human design was supplementing the Creator's plan for the universe' (29). America's nature was to become a paradise that was to be regained.

As the French philosopher Rémi Brague writes, such a view of technology as the human potential to tame wild nature is now generally accepted. Modern technology has become defined by domination.

> Technological activity was considered up until the modern era as a perfection of nature. It was a matter of delivering nature of that which it could not produce by itself. One then appealed on behalf of effective nature to a superior jurisdiction, which might be seen as the not completely accomplished intent of nature, or the plan of the Creator. Henceforth it was a question of imposing external order upon nature. If technology could set out to ameliorate nature, it was because nature left a lot to be desired. Modern technology thus accepted a fundamental premise of Gnosticism. (Brague 2003, 209)

Such views of technology in human hands to regain dominion and control over nature presuppose and, to some extent, even promote a dualist view of humanity and nature.

A Conceptual Exercise in Philosophical Anthropology

The dualist view of nature and human culture (including technology) thus seems to be engraved in the Western mind, although Darwinian evolution seems to question this dualism. In the following section, I want to suggest a perspective on technology according to Darwinian lines, a view of technology as a part of human culture and, as such, a part of and continuous with nature. Instead of seeing technology as merely an epiphenomenon of human culture, I argue that technology is a central and irreducible aspect of our human existence, even to such an extent that the philosopher Andy Clark has argued that humans are 'natural-born cyborgs'. Developing and

using technology is something that apparently comes quite naturally to humans. I will argue that these scientific developments should stimulate us to reconsider the questions what it means to be human, and how humans and their technology relate to nature. As a consequence, this chapter is a conceptual exercise in philosophical anthropology.

As for the use of the term 'technology', I will use this term broadly to designate 'the intelligent use and development of material elements which are designed, made, used, and modified for some purpose'.

The Evolutionary Roots of Human Technology

An appropriate and interesting question to start with is this: Where does our capacity for developing technology stem from? Archeologists, paleontologists, and paleoanthropologists all seem to agree that the use of tools, and thus of technology as defined above, is a defining characteristic of human nature. Humans have never been without technology. The famous periodization of human history into *Paleolithic* ('ancient stone' age, the period of chipped stone artifacts), *Mesolithic* ('middle stone' age), *Neolithic* ('new stone' age, the period of polished stone artifacts), *Bronze Age* (when copper and bronze artifacts appear), and *Iron Age*, was inspired by human tool production and tool use. That division has become part of our culture, even though it has been modified several times including the addition of several subdivisions.

This periodization mirrors the belief that all species of *homo* that have ever existed have been able to use, manufacture, and/or modify tools. This is, of course, a conjecture, since we can only make inferences about tool use in early hominids because of the discovery of stone tools (Schick and Toth 1993). It is possible and even likely that some human species used tools made of wood, bone, grass, fur, and so on, instead of, or in addition to, stone tools. However, unless these were fossilized, there are little to no remains of such tools because they were not preserved.

By looking at these stone tools, an expert can tell how they were made and where they came from in both place and time. On the basis of such information, some have argued that one can even discern developments in the way stone tools were fabricated. For instance, in 1968, the archeologist Grahame Clark argued that one can discern five technological modes in the production of stone tools (Clark 1977, 21-38 and *passim*; Clark's book was originally published in 1968; see also Foley and Mirazón Lahr 2003, 113ff.). These five modes 'express more complex ways of making

stone tools, leading toward greater control and a more effective use of raw material to produce particular end products' (Foley and Mirazón Lahr 2003, 113). In other words, Clark's classification mirrors a progression in the fabrication and refinement of stone tools, from simply striking a flake off a core without much concern about shape (mode 1, Oldowan industry, 2.5-1.4 million years ago) to the complex fabrication and refinement of multi-functional blades of various sizes and lengths, involving microlithic technologies (mode 5, transitional phase between the Ice Age and the Holocene period). Different hominid species are associated with each different mode: for example, *Homo habilis* and *Homo ergaster* are associated with mode 1 technologies; *Homo erectus, sapiens*, *heidelbergensis*, and *neanderthalensis* are associated with mode 2 tools. *Homo sapiens* probably had the flexibility to use tools from all five modes.

The pervasiveness of tool use among humans raises an interesting question: is the capacity to use tools restricted to humans? In his famous book, Kenneth Oakley wrote that 'man may be distinguished as the tool-making primate' and that 'employment of tools appears to be his chief biological characteristic' (Oakley 1972, 1). Oakley points to tool use among chimpanzees, but argues that this 'is a far cry from the systematic making of stone tools, the earliest known examples of which evidently required much premeditation, a high order of skill and an established tradition implying some means of communication' (2f.). Nowadays, there is much evidence that shows that tool use among animals is ubiquitous. There are examples of otters using stones to crack crab shells, birds that use stones to crack snail shells, and chimpanzees that use twigs to catch termites, ants, or to extract honey from honeycomb. In all these cases, artifacts are being used to manipulate nature. Humans, thus, are not the only species that use technology.

If that is agreed upon, then the question is: how special are *we* in *our* use of technology? Does our tool use differ qualitatively from those of other species, and if so, in what way? Or are we simply expanding the possibilities that are also present in 'lower' creatures? Otters and birds are using stones to acquire food, but they may have mastered the use of stones as tools through trial-and-error learning. If so, does this imply that they comprehend the underlying principles of the problem? Are they 'aware' of the cause-and-effect relations inherent in their tool use?

There are still many questions here that are unanswered and many venues for further research. Yet it seems that the Tanzanian chimpanzees that are so fond of termite fishing and ant dipping at least have some clue about what they are doing. Ian Tattersall (2000, 52f.) writes,

Twigs of different kinds are selected for different purposes, and recent observations reveal that stouter branches are used as levers or to dig out honey from bees' nests. Significantly, twigs are not necessarily discarded when they become bent or frayed; as long as they can, chimpanzees will usually break off the end of such a tool to 'refresh' it and will continue using it as long as such modification is possible. Chimpanzees have also been observed to break off branches for use in hooking in fruit from otherwise inaccessible tree limbs, for attacking potential predators, and for expelling the occupants of holes in trees. Branches [instead of twigs] are also brandished to enhance the effectiveness of aggressive displays, and rocks and sticks are thrown in attempts to intimidate competitors or predators.

Clearly then, as Tattersall acknowledges, those chimpanzees have some insight into the principles of using twigs and, perhaps, using the power of analogous reasoning, the use of branches. Yet, as Tattersall writes,

This does not mean that chimpanzees are toolmakers (or even tool users) in the sense that modern humans are – clearly, they are not – but it shows that chimpanzees are capable of *forming a mental picture* of what attributes some simple tools, at least, need to have to accomplish a particular aim. (53; italics added, T.S.)

Shaping tools to improve their function shows insight into its workings and knowledge of the underlying principles. This, however, seems to involve cognitive functions of a quite advanced type. These cognitive feats may have emerged from trial-and-error learning, but they go much further. If stone-using otters or birds ever come to a territory in which there are no stones for them to use, they are facing a real problem. Because there are no stones they can use, these animals might even starve to death. They lack the cognitive capacities for improvisation and flexibility, for adapting their actions accordingly, because they lack the cognitive capacities for insight into the principles underlying the use of stones.

Non-human primates such as chimpanzees do seem to grasp the underlying principles. However, one of Tattersall's central claims is that the cognitive abilities of humans even go beyond those of chimpanzees and other non-human primates. There seems to be a 'cognitive gap' between humans and chimpanzees. Ian Tattersall, Richard Leakey, and Stephen Mithen, for instance, argue that human tool use is somehow connected to the complexity of the brain (Tattersall 2000; Leakey 1995; Mithen 1996).

There thus seems to be a consensus among scientists that the human species, which already had made a cognitive leap compared to other species such as the chimpanzee, somewhere and somehow during its evolution made another cognitive leap. It crossed a critical threshold, which led to the 'big bang of culture'. And this 'big bang' led eventually to art, religion, science, and advanced technology (cf. Klein and Edgar 2002).

If true, what does this say about technology? Perhaps there really is a cognitive gap between humans and other creatures. Nevertheless, if we agree that it was nature that caused the 'big bang of culture', can we plausibly defend the modern idea that culture and technology stand opposed to nature any longer? Especially since we can see the use of basic stone tool technology by non-human species such as otters, birds, and chimpanzees. I agree with Frans de Waal (2001, 271) when he writes: 'Thinking of nature and culture as distinct and separate domains is tricky: there's plenty of nature in culture, just as there is plenty of culture in nature.'

Technology and What It Means to Be Human

So, on the one hand, technology seems to be an entirely natural process. In the course of evolution, different species have managed to use tools in quite advanced ways. However, scientists seem to agree that, in the case of humans, something peculiar is going on. There seems to be a cognitive gap between tool use among non-human primates and other animal species, and the advanced and flexible ways that humans are able to use tools.

In the last couple of hundred years, technology has advanced up to a point where we seem to have lost contact with our natural environment entirely. In our times, our habitat has become the technosphere which seems remote from nature, from which we emerged. Guided by economic rationality we have become estranged from nature, and downgraded nature to nothing more than a set of resources that we can use for our own well-being. There is a constant threat that we will see nature as the realm of the wild that has to be tamed, of that which does not belong to culture or has not (yet) been cultivated, of that over which humankind has dominion. Such an attitude that mirrors an existential remoteness of culture from nature can lead to patterns of behaviour that result in the destruction of other living beings, the biosphere, and even the destruction of our habitat and of our own species through technology.

Getting rid of technology is not an option, for we can no longer survive without it. We have grown dependent upon the existence of technology, as

much as our technology depends on our cognitive abilities. Our relation to technology – whether we like it or not – has become one of symbiosis between humans and machines. What we need, then, is a perspective that is able to reconnect us, our culture, and our technology to the natural environment in which we are embedded. Such a perspective should also be able to guide our attitudes towards that natural environment when using technology. One such perspective that I find attractive and would like to explore further (although I do not have the space here to do so) is that of humans as natural-born cyborgs.

Just think about it – think about cochlear implants or 'simple' hearing devices. Think about the pair of glasses that you're wearing (or contact lenses), a pacemaker, an artificial heart or hip, or the medical application of steel pins in a human body. Human lives depend on these technological artifacts. And as theologian Gregory Peterson (2003, 217) writes, using medication 'merges us in the most intimate way with our technology, as our bodies absorb chemicals that may never have existed in nature'. 'Enhancement technology' – technology that supplements and sometimes replaces biology – is especially prominent in the medical sciences. In many medical applications there is truly a merging between humans and technology.

The symbiosis between a human being and machine is described by the term *cyborg*, the abbreviation of 'cybernetic organism', which was coined in 1960 in a paper on space travel by Manfred Clynes and Nathan Kline (Clynes and Kline 1995, 29-33). Clynes and Kline wrote that because people were not biologically adapted to survive the harsh conditions of outer space, science should alter human biology so that people would be able to survive in space. Such an alteration would result in what Clynes and Kline call a cyborg, an organism that 'deliberately incorporates exogenous components extending the self-regulatory control function of the organism in order to adapt it to new environments' (31). Clynes and Kline describe a cyborg as an entity that incorporates external elements in its physical constitution as a survival strategy to adapt to changing influences from the surroundings.

Cyborgs are no longer merely considered creatures in science fiction films or books; nor are cyborgs the ideals of 'transhumanists.'[1] Indeed, being a cyborg nowadays may be an appropriate metaphor for describing our technological human condition, as cognitive scientist and philosopher Andy Clark argues (Clark 1997; 2001a; 2001b; 2003). Clark draws heavily on the recent neuroscientific approach of 'embodied' or 'situated' cognition – an approach that strongly emphasizes the role of *embodiment*

and in cognitive processes. Clark (2003, 10) argues that 'What makes us distinctively human is our capacity to continually restructure and rebuild our own mental circuitry, courtesy of an empowering web of culture, education, technology, and artifacts.' For Clark, the term cyborg is not limited to the inhabitants of science fiction stories and films such as *The Matrix*; instead it signifies the fundamental human ability 'to enter into deep and complex relationships with nonbiological constructs, props, and aids' (5). Humans possess a peculiar though natural flexibility in being able to use all kinds of external objects to solve certain problems (in the broadest sense of the word). Therefore Clark speaks about humans as *natural-born* cyborgs: the use of technology comes as natural as walking, talking, eating, and having sex.

Consider, as an example, a blind person using a stick to find her way around in the world. How are the person and the stick related? On a physical level, there may be a demarcation between body and the tool (stick). However, in *using* the tool that demarcation disappears: the tool at hand becomes an extension and hence part of the body. As a matter of fact, this example of a blind person and a stick is used by philosophers such as Michael Polanyi (1962, 55f., 58f.) and Maurice Merleau-Ponty (1962, 143) to argue the same point: that our 'body scheme' – to use Merleau-Ponty's phrase – is not spatially fixed, but dynamic. What I see as belonging to 'me' (i.e. inherent to my body scheme) and not belonging to 'me' (i.e. external to my body scheme) is highly context dependent. The boundaries between our bodies and the world can become – and often simply are – fluid. The car that is parked on my driveway is external to my body scheme. Yet, when I drive my car, my car becomes part of my body scheme, and what happens to my car feels like it is affecting me directly.

In a sense then, and following Andy Clark, I believe we can agree with theologian Gregory Peterson (2003, 217) that we have always been cyborgs: 'Human beings are tool users, and modern human beings are tool users par excellence. So familiar has our technology become that it is often invisible to us. But any individual who wears glasses or contacts is in a sense a cyborg.'

Cyborg technology can be seen as a *replacement* of biology, for example in the case of cochlear implants. Someone who has such an implant is (after a long and sometimes arduous process of getting used to it) no longer consciously aware that the implant is present – unless it malfunctions. On the other hand, cyborg technology is also an *extension* of biology. Telescopes and microscopes extend our visual senses because when we look through them, we see things that under normal circumstances

are hidden from sight. Our flexibility in adapting to such technology is amazing. Centuries ago, scientists literally could not believe their eyes as they gazed through Galileo's telescope. They thought that Jupiter's moons were artifacts produced by the telescope, and that they were witnessing an optical illusion. Nowadays you can go to any mall and buy a cheap telescope that will reveal the craters of the moon in vivid detail. Glasses and contacts also extend biology. With the help of cars we extend our motor capacities and jet planes give us the wings we never had. A tennis racket extends a sports star's arm, and so on.

The notion of technological extensions of the body is not exactly new among philosophers of technology. In 1877 the German philosopher Ernst Kapp (1808-1896) wrote that many technological developments were rooted in 'organ projection' (Kapp 1877). A hammer looks like a fist, a saw like a row of teeth, and the telescope is a technological copy of the eye. Much of technology was, according to Kapp, an enlargement and externalization of human organs, such that technology supersedes human capacities. The link between technology and human embodiment was also perceived by the philosophical anthropologist Arnold Gehlen (1904-1976). In 1957 Gehlen wrote a classic essay on the relationship between humans and technology, in which he introduced three terms: *Organentlastung*, *Organverstärkung*, and *Organersatz*. (Gehlen 1957). Gehlen speaks of *Organentlastung* ('organ relief') in the case of a car or a boulder car, which makes the physical pulling or lifting of objects unnecessary. *Organverstärkung* ('organ reinforcement') is the case when technological artifacts enhance and reinforce human capacities, as is the case with a hammer or a microscope. In the case of *Organersatz* ('organ replacement') there is the adding of functions that are otherwise not present to humans: we are able to fly with airplanes, which 'replace' our absent wings.

But Clark wants to go further. He believes humans as natural-born cyborgs are not only capable of creating extensions of their physical bodies, they also *extend their minds*. Pens and pencils are extensions of our hands. The paper on which we write things down, however, becomes an extension of our cognitive apparatus. By writing things down, we no longer need to remember them. Papers with notes, but also paper calendars, electronic PDAs that synchronize with Outlook, reference books and encyclopedias (whether made of paper or in electronic form) – Clark believes these are all external elements that are being used by us as extra-neural memory banks. And what about computers and the Internet? Cyberspace is starting to become a collective memory bank.[2] E-mail and chat rooms extend our communicative abilities (as did the telegraph, telephone, and fax ma-

chine before) – and the end of these developments is not yet in sight; one example of this is 'telepresence' (the projection of one's physical appearance in, for instance, a global business meeting) is one of the future possibilities that may make business trips unnecessary.

We have to remember, however, that Andy Clark speaks about humans as *natural-born* cyborgs. It is easy to forget that this fascinating technology has a biological basis, and that it all began with the stone tools that early human species started to use as technology some 2 million years ago:

> It was at this time that some of the early hominids equipped themselves with tools and moved into new evolutionary niches that proved to be enormously successful. This was the start of a new adaptation, seemingly insignificant at first, that continued and evolved over the next few million years and finally led to what and where we are today (Schick and Toth 1993, 18f.).

Clark's concept of the natural-born cyborg is a powerful and imaginative metaphor to emphasize this natural character of human technology and the continuity between humans and the rest of nature without denying or ignoring the peculiarity of human tool use in comparison with animal tool use. There is a fundamental but natural ability in humans to build up a very intimate and flexible relationship with non-biological external tools and technologies. Using technology apparently is what comes naturally.

Conclusion

I am still sitting in my study. And when I look around I still see human-made items – artifacts such as books (lots of them), book shelves, a computer, a desktop lamp, pens and pencils, a PDA, and so on. However, their nature has now changed. I look upon them as being somehow a part of me. The books, my PDA – they all are somehow intimately connected to my biology, including the cognitive processes going on in my mind. When I look out my window, I see houses, but also some gardens with plants and trees. Plants and trees are generally regarded to be natural phenomena, yet the way they are planted, as parts of the town that I live in, is purely artificial. However, the arrangement of the town may be artificial, but the way humans have made their own environment strikes me now as quite natural: this is what humans have done from the emergence of the human species onwards.

Does the use of technology equal the exercise of dominion? Certainly, technology has become dominion, but only at the moment people started to forget that they had emerged from nature. Religion (especially the Christian religion) has done a lot of harm to nature by placing humans halfway between the beasts of the earth and the angels of heaven – that is something I as a theologian have to admit. Moreover, because we have severed the bonds between technology and nature, we have let technology gain control over us, and allowed nature to become a demonic force. We need to find a way to reconnect ourselves to nature, to change our perspective and not perceive nature as a resource for economic benefit, but as a partner with which we need to cooperate in order to survive in the long run.

I am an inhabitant of a technosphere, of a place that is itself an artifact, designed and technologically manufactured by humans. Yet this technosphere is not opposed to nature, but is a part of it, as the theologian Philip Hefner (1993, 154) writes: 'The hybridized navel orange, the automobile, the asphalt parking lot, the computer – these are nature. We call them *techno-nature*, recognizing that techno-nature is, in a real sense, the only nature that now exists on our planet.' The technosphere has *emerged* from nature, it is an emergent property. Through our technology we have gained a certain freedom from biological and evolutionary constraints. However, that freedom is not something that exceeds nature, but is, to use Hefner's phrase (1998, 179), 'nature's way of stretching itself toward newness'.

Perhaps the metaphor of the natural-born cyborg is a way of overcoming the dualism between nature and culture, or between nature and technology, although it may inevitably be a metaphor that for some sounds too technological. The dualism between nature and culture represents an alienation that needs to be overcome: it is not only an alienation from the nature that bore us, but, moreover, an alienation from our own nature. The metaphor of the natural-born cyborg can reframe the continuity of humans and their technology and nature in modern terms, and hopefully thereby give people a new sense of being at home in the universe.

Notes

1   'Transhumanism,' according to Wikipedia, 'is an international intellectual and cultural movement supporting the use of new sciences and technologies to enhance human mental and physical abilities and aptitudes, and ameliorate what it regards as undesirable and unnecessary aspects of the human

condition, such as stupidity, suffering, disease, aging and involuntary death.'
See: http://en.wikipedia.org/wiki/Transhumanism.

2   Moreover, the virtual reality of cyberspace is an extension of physical spatiality. This again is an aspect that forces us to rethink certain aspects of Western metaphysics. See: Wertheim 1999; Heim 1993; Heim 1998.

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3   Technophilia: Internet as a Vessel of Contemporary Religiosity

Karen Pärna

Introduction

The front cover of an October 1999 issue of the American magazine *Business Week* features a rendering of the *Creation of Adam* by Michelangelo, a scene from the ceiling of the Sistine Chapel in Rome. On a dark blue background we see God's finger reaching for Adam's hand. This is a modern version of a familiar detail from the *Donnadio* and it has an unmistakable high-tech aesthetic to it. Both hands are drawn in a style that reminds one of the wire frame models used in three-dimensional computer graphics, and because of the bright yellow lines that delineate them the hands appear electrified. A spark of light emerges from the point of contact and from the space between the two hands the text 'the Internet age' comes to the fore.

Figure 1. Artist: J. Calviello. *Business Week* 4 October 1999. Front cover image. *Business Week 3649*.

It is not hard to decode the message; the religious undertones of the image are immediately recognizable. Associations with godly inspiration, new life, enlightenment and the zenith of creation come to mind. In this elevating scene a parallel is drawn between the potential and genius of the Internet and the biblical miracle of creation. A divine invention has been born, bringing about a new era – 'the Internet age'. However, *Business Week* is not a messenger for any specific religious organization or set of beliefs; it is concerned with the corporate world, finance and world affairs. Bearing this in mind, the allusion to a biblical tale in the otherwise strictly secular setting of a business publication is striking, for it suggests a connection between religion and the domain of technology and commerce.

This seemingly contradictory relationship generates a number of questions that I shall tackle in this paper. Namely, what might be the significance of religiously charged terminology in public representations of technologies such as the Internet? Which kinds of sentiments are being articulated and what, if anything, does the use of religious imagery and analogies in discourses about new technology say about religiosity in contemporary Western society?

In what follows I will argue that, while the Internet is an exemplary product of the modern, rational-scientific mindset, in the (mostly enthusiastic) tales about it, it serves as a vessel of religious sentiments. As has been the case with several other technological inventions throughout history (Corn 1986; Czitrom 1982), the Internet was credited with extraordinary powers to change and improve many aspects of life and it was granted a special, even sacred, status. A look at reports about the Internet in articles from international general interest and news publications, ranging from *Time Magazine, The New York Times* and *The London Times* to *Forbes* and *Business Week*, in the biographies of leading inventors and Internet visionaries, and in books on the history and future of this new technology reveals that it was perceived as an object that transcended what was hitherto thought to be within the grasp of humanity. Placed on such an elevated pedestal, the Internet became an object of reverence to which truths and beliefs about the future of the society could be attached. At the heyday of the hyperbolic interest in, or 'hype' around, the Internet, this technology was granted a significance that, to all intents and purposes, can be called a religious one. Let us look at this expression of religiosity and consider how the Internet acquired the special status that it had.

The Internet Age

The 'Internet age' edition of *Business Week* was but one specimen in a veritable avalanche of publications devoted to the Internet that marked the public interest for this new technology throughout the latter part of the 1990s. A lively utopian discourse emerged in the journalistic media and other popular publications in North America as well as in Europe, Australia, and parts of Asia. Although there were exceptions, much writing about new information and communications technology (ICT) in general and the Internet in particular overflowed with visions of wealth, enlightenment, and boundless freedom. Age-old dreams of comfort and the betterment of human existence, transcendence beyond the limitations imposed on people by time and matter, and hopes of greater harmony and growth of knowledge were attached to this technology.

The aforementioned *Business Week* cover typifies the sort of language and imagery that was employed regularly in articles about ICT and the Internet. Accounts of the powers and anticipated effects of the Internet on society were often padded with (quasi-) religious notions and epithets. Some visions, such as the ideas expressed by the American ex-Vice President Al Gore in his 'information superhighway' speeches, where he promoted the Internet with phrases such as 'the network of networks … ultimately linking all human knowledge' (Gore 1998), may call forth vague associations with some form of supra-human entity. Throughout Al Gore's terms in government, the Internet and the knowledge economy were important points on his political agenda. In several speeches he used the term 'information superhighway', and promoted the Internet as a powerful force that would make the world a better place. For instance, in a speech given at the conference of the International Telecommunication Union in 1998, Gore praises the Internet, or 'the Global Information Infrastructure' as the means of realizing some age-old dreams:

> For all the stunning capabilities of the Global Information Infrastructure, we must remember that at its heart it is a way to deepen and extend our oldest, and most cherished global values: rising standards of living and literacy, an ever-widening circle of democracy, freedom, and individual empowerment. And above all, we must remember that – especially in this global economy and Information Age – we are all connected, from Minnesota to Mongolia, from Madrid to Mali (Gore 1998).

Other enthusiasts have made use of more explicit religious terminology: the Internet has been described as a 'demiurgic force' (Gilder 1997), the conditions expected to be created by this technology as 'heaven', 'paradise', 'nirvana', and so forth. (Kaplan 1999; Quittner 1999; Baker & Beaton 1997; *Economist* 1995), and those active in the branch have been profiled as 'messiahs', 'evangelists', and 'prophets' of a new worldview (*Economist* 1999; 2000; Pennar 1997; Malone 2000). For instance, in the articles 'Nerd theology' (1999) and 'God Is the Machine' (2002), the former editor of the technology magazine *Wired*, Kevin Kelly, speaks of computer technology as a deity. In the same vein, in their book *The Long Boom* (1999) the American economists Schwartz, Leyden, and Hyatt refer to the Internet as the 'Great Enabler', an all-powerful agent of change and the prime cause of an era of unprecedented wealth (Schwartz et al. 1999, 19). Similar language is used in commending prominent computer scientists, web programmers and e-business innovators, who are variously portrayed as 'mini-gods' (Kelly 1999a) and virtuosi (Berger 1996). The business publication *Forbes* even describes Tim Berners-Lee, one of the main inventors of the World Wide Web as 'St. Tim of the Web' (Reiss & Levine 1999). References were also made to strong faith in the Internet, the spreading of its 'gospel' and evangelical missionary fervour (Alexander 1999; Clarke 1999; *Guardian* 1998). Finally, it was not unusual for journalists and various experts to speak of 'Internet religion', 'web religion', or 'digital religion' (Cortese 1995; Mack 1999; Reinhardt 1999). For example, in his biography *A Very Public Offering* (2001) the youthful Internet entrepreneur Stephan Paternot describes the early days of e-commerce as follows: 'It was a potential new religion. This was a religion being invented' (Paternot 2001, 57).

In short, rhetoric about the Internet was filled with religious analogies and some felt able to describe feelings inspired by it as religious. But was this not a case of mere florid metaphor? Looking at the examples just mentioned, can one really speak of religion? In line with Paternot's suggestion that the craze for Internet-related businesses was giving birth to a new religion, I would posit that the public interest for the Internet was indeed a religious affair. However, unlike Paternot, I would not claim that *a new religion* was being invented. No religious organization or dogma in the conventional sense was born. Rather, the discourse concerning the Internet was a manifestation of a more implicit form of religion. By that I mean that, without any exclusive links to religious institutions, the technology concerned was nonetheless charged with characteristically religious notions: transcendence, salvation, and a strong belief in the

power of one's object of admiration to transform one's existence. Above all, the trust in the great potential of this technology fulfilled a basically religious function: it presented a frame of reference for making sense of the world.

The Relocation of the Religious

The idea that religion need not manifest itself exclusively in an especially designated domain (i.e. within the boundaries of organized congregations) has been acknowledged by a number of sociologists. Thomas Luckmann and Robert Bellah, among others, have argued that instead of the claimed complete secularization of the contemporary Western society, a shift in religiosity is taking place. Religion is being relocated from its traditional institutions to the everyday, secular world.

Both authors employ a functional definition of religion and hold that it is a system of meanings that is anchored to certain notions or objects that serve as transcendent guarantees of the truths and values of a particular worldview. The defining task of religion, then, is to present frames of reference for making sense of the world and to provide answers to basic existential questions. It can be fulfilled by a variety of seemingly non-religious phenomena. Accordingly, Luckmann uses the term 'invisible religion' to denote the kind of 'hidden' religious sentiment that a variety of contemporary ideals, such as 'familism' (the veneration of the family unit), the cult of the individual, the social mobility ethos, and the democratic ideal entail (Luckmann 1967, 106, 113). Bellah's concept of 'civil religion' in public life reveals a similar understanding that certain secular phenomena display religious facets. According to Bellah, secularized versions of traditional (Christian) religious thought can be found in a variety of American social phenomena: Memorial Day, presidential inaugurations, rituals at veterans' cemeteries, the ideal of the 'American way of life', and so on. He indicates that although references are made to religious convention (martyrdom, charisma, evangelism and the Promised Land), civil religion is divorced from this context and ultimate meaning is found in objects that belong to the secular world (Bellah 1970, 175-179).

Technophilia and the Internet

Collective 'technophilia' is another example of such relocation of the religious in the modern world. In the book *The Internet. A Philosophical Inquiry* (1999) the British philosopher Gordon Graham refers to the cultural theorist Neil Postman's use of the term 'technophile' when speaking of individuals 'who gaze on technology as a lover does on his beloved, seeing it without blemish and entertaining no apprehension for the future' (Postman quoted in Graham 1999, 9). Graham describes technophilia as the activity or attitude of technophiles: blind love of technology that implies complete trust in its omnipotence (Graham 1999, 9).

According to the French philosopher Jacques Ellul, such love of technology is an ideology. As he sees it, technology and applied science have such a prominent position in today's society that they have become its guiding myths. In *The Technological Bluff* (1990) he argues that modern-day belief in technology is based on the conviction that it is essential to society and can provide solutions to all of humankind's dreams. Anticipating the hopes that were to be pinned to the Internet some five years after the publication of the book Ellul asserts:

> Not only is technology good, not only is it indispensable, but also... it alone can achieve all that human beings have been seeking throughout centuries: liberty, democracy, justice, happiness (by a high standard of living), reduction of work, etc. (Ellul 1990, 30).

In other words, Ellul holds that, in the modern world, technology has been granted a significance previously associated with mythical, heavenly forces. First, it is thought to have powers that go beyond human capacities and it holds the promise of delivering what we long for. From this perspective, technology can be seen as an agent of salvation – it offers hope of a world better than the one we know. Second, being the point of reference to which our culture measures its truths and ideals, technology moulds and steers society's beliefs and values in a specific direction.

To use Neil Postman's formulation, in the contemporary world one can observe the 'deification of technology' (Postman 1992, 71). By this he means that technology has a growing influence on how life and the world are given meaning in Western societies. What he describes as a 'technological culture' 'seeks its authorization in technology, finds its satisfactions in technology, and takes its orders from technology' (Postman 1992, 72). In short, a technophiliac society refers to technology as a somehow

transcendent, omnipotent power that forms the framework for definitions of what is important, desirable, and meaningful.

In this process of constructing meaning, a number of facets come to the fore that mark technophiliac discourses as religious. Namely, the construction of objects with a superhuman status, shared convictions and (utopian) beliefs, trust in the power of certain objects or individuals to bring about radically new and better ways of existence, and collective excitement about the objects or ideas in question.

The intense public fascination with the Internet was a prime case of technophilia and an exemplary manifestation of the religious dimensions just mentioned. Since its popularization and speedy commercialization from the mid-1990s onwards, this new technology has been praised as a radically new business opportunity, as the ultimate platform for democracy, as a cornucopia of self-generating riches, and as an agent that will make work and communication easier and more pleasant. Media reports and various popular-scientific and futuristic publications, with titles such as *Being Digital* (Negroponte 1995), *Meganet: How the Global Communications Network Will Connect Everyone on Earth* (Dizard 1997), *The Death of Distance: How the Communications Revolution Is Changing Our Lives* (Cairncross 1997) and *Telecosm: How Infinite Bandwidth Will Revolutionize Our World* (Gilder 2000), reveal the popular sentiment that with the introduction of the Internet something extraordinary and marvellous had started to take place. As early as in 1995, in an article entitled 'Technomania', a bewildered but enthusiastic journalist at *Newsweek* refers to the Internet as the mysterious and powerful entity that is bound to have far-reaching effects on our lives: 'as we grappled with the unanswered questions [with regard to the Internet], we're in for the ride of a lifetime' (Levy 1995). The author regards the introduction of digital information technology, such as the Internet as a momentous historical event. As he sees it, a 'Bit Bang' – the Big Bang of information technology – has taken place that 'will change every aspect of our lives' (Levy 1995).

In the years to follow, the Internet continued to be portrayed in these terms: as a fascinating and awe-inspiring force of exceptional capacities. The belief that it was the prime agent behind the birth of a new kind of society formed one of the central themes of the public discourse about the Internet. Albeit for a brief period, this technology was presented as *the* object that defined the nature of modern society. To speak with Neil Postman's words, the Internet became deified: it was seen as a superhuman force, an object capable of making sweeping changes in the world as we know it and thus worthy of worship.

Transcendence by Paradigm Shift

The Canadian scholar historian of technology, David Noble, describes technologies that are granted such extraordinary capacities to change the world as 'technologies of transcendence' (Noble 1999). To Noble, these are technological inventions upon which great hope is pinned and, typically, they are hailed as the means of overcoming the uncertainties and shortcomings of the human condition. In *The Religion of Technology* (1999) he argues that throughout history such 'technologies of transcendence' have been approached as the means to 'the recovery of man's lost divinity' (Noble 1999, 6). He shows that since the beginning of the second millennium crafts and skills, scientific knowledge and technology have been regarded as a step closer to divine powers and knowledge: ever-greater control over nature, space, the fate of humanity, and even mortality. Noble's examples from the more recent history are atomic weapons, space travel, artificial intelligence, and genetic engineering. In all these cases he recognizes the desire to transcend: to triumph over the forces of nature, to reach the heavens and rise above the limitations of the earth, to create life and overcome death. In short, when revered as a vehicle of transcendence, technology is seen as a means of reaching further than what was thought to be within the grasp of humans. Visions are sketched of how the world will be transformed under the influence of a new invention and often, utopian scenarios of a new world are born.

In the book *The Digital Economy. Promise and Peril in the Age of Networked Intelligence* (1997) by the Canadian writer Don Tapscott, one encounters a typical formulation of the feelings associated with the imminent rise of a new kind of reality where the Internet would play a key role:

> We are at the dawn of an Age of Networked Intelligence – an age that is giving birth to a new economy, a new politics and a new society. Businesses will be transformed, governments will be renewed, and individuals will be able to reinvent themselves – all with the help of information technology. (Tapscott 1997, 2)

Tapscott attributes remarkable powers to what is described as 'Networked Intelligence': it will transform society and redefine the very identity of individuals. In this new world ICT is to be the key to meanings, beliefs, and ways of acting. Of crucial importance to his argument is the emphasis on the radical break with the current, familiar worldview that the Internet era implies. As Tapscott sees it, new technology will be the cause of an all-en-

compassing revolution (Tapscott 1997, 4). This understanding of technology reveals a belief in its capacity as a vehicle of transcendence. In Tapscott's vision of the future, technology will take humanity beyond the hitherto known and give birth to new systems of meaning. However, in the secular tale of transcendence that Tapscott's book tells, we encounter an alternative, more scientific term for the process of exceeding the world as we know it: a 'shift', change or innovation in 'paradigm' (Tapscott 1997, 29; 54; 95).

Originally derived from Thomas Kuhn's *The Structure of Scientific Revolutions* (1962), the idea of paradigm change was a favoured metaphor in attempts made in the public discourse to emphasize the far-reaching influence of the Internet on various aspects of society (Burman 2003; Grow 2001; Tapscott & Caston 1992;). For instance, the 'high-tech high priest' (Goodman 2001) and 'techno-evangelist' (*Economist* 2000b; Helmore 1999) George Gilder, who saw cause for a 'paradigm party' to celebrate the rise of new technologies, spoke of a new, 'Gilder paradigm' in defining wealth and scarcity in the Internet era (Gilder 1996; 1998). Similarly, the *Financial Times* writes of a 'paradigm-shift in our cognisance of reality' (Pearson 1995), in trade (Authers 1998) and in institutional hierarchies (Taylor 1999). If Kuhn's term refers to fundamental changes in the set of accepted truths and practices that form a scientific discipline, then the paradigm of the Internet era also was associated with a revolution in truths and values.

Fashionable catch phrases and neologisms of the era, such as information superhighway, cyberspace, online world, electronic frontier, New or Knowledge Economy, network society, and so on all referred to this shift in paradigm. These terms suggested pioneering discoveries, innovation, and whole new conceptualizations of space, time, distance, social interaction, and of doing business. They carried the connotation that with the implementation of networked information technology society would be lifted above its *status quo* to a novel kind of existence. For example, in the best-selling book, *New Rules for the New Economy* (1999), Kevin Kelly describes the so-called New Economy as a new reality and he mentions three ways in which it differs from anything preceding it. First, it is disembodied and weightless, meaning that its main resource and object of trade are non-material products – 'information, relationships, copyright, entertainment, securities and derivatives' (Kelly 1999b, 3). Second, he considers information technology and 'ubiquitous electronic networks' (Kelly 1999b, 2) to be *the* sources of hitherto unknown wealth. Kelly notes that 'the network economy will unleash opportunities on a scale never seen before on Earth', and adds that this is not a far-fetched utopian statement

(Kelly 1999b, 156). Third, he describes the New Economy as global. With much excitement and some pretence of prophecy he makes it clear that the current point in history is an important one for the whole world: 'we are now at a moment when a cloak of glass fibres and a halo of satellites are closing themselves around the globe to bring forth a seamless economic culture' (Kelly 1999b, 156).

A number of distinctive themes become clear from the optimistic visions that informed this notion of a paradigm shift. If we recall Jacques Ellul's allusion to the promise of technology to fulfil a range of dreams, then the Internet was indeed regarded as the long-awaited answer to age-old aspirations: wealth and the betterment of standards of life, freedom and equality, the redefinition of space, and finally, harmony among humans and better mutual understanding. I shall discuss two of these themes – the belief that the Internet would radically transform our notions of space and distance, and the trust in its capacity as a liberating force.

Control over Matter and Space

In *Cyberspace and the American Dream: A Magna Carta for the Knowledge Age* (1994) a number of outspoken Internet visionaries affiliated with the Progress and Freedom Foundation (Esther Dyson, George Gilder, Alvin Toffler, and George Keyworth) expressed their belief that the Internet would play an active part in the 'overthrow of matter' and the ascendance 'of the power of the mind' (Dyson et al. 1994). In this collective statement an idea is presented that formed an important ingredient of the optimism about the Internet: in the information age greater emphasis would be on knowledge and digital data. 'Intangibles' – 'intellectual capital, skills, research and development (R&D), brands, relationships and reputation' (Zadek 2001, 28) – would eventually reduce the relevance of physical things.

Accordingly, Don Tapscott imagines that 'in the new economy, more and more of the economy's added value will be created by brain rather than brawn' (Tapscott 1997, 7). In a similar vein, in his *New Rules for the New Economy* Kelly posits that the influence of the Internet and other networked ICT will diminish the role of physical things in the world:

> The principles governing the world of the soft – the world of intangibles, of media, of software, and of services – will soon command the world of the hard – the world of reality, of atoms, of objects, of steel and oil, and

the hard work done by the sweat of brows. Iron and lumber will obey the laws of software, automobiles will follow the rules of networks, smokestacks will comply with the decrees of knowledge (Kelly 1999b, 2).

Such visions of a new kind of spatial experience were not propagated by science fiction and popular science writers alone. Reputable authorities from the academic world, such as Nicholas Negroponte and William Mitchell – both professors at MIT – claimed that bits and software were shaping the physical environments in which we live, and that they were increasingly transforming matter into data. As Negroponte says in *Being Digital* (1995): 'Digital living will include less and less dependence on being in a specific space at a specific time, and the transmission of place itself will start to become possible' (Negroponte 1995, 165). He imagines that in the near future, as the possibilities of cyberspace and the Internet are developed further, physical distances will become irrelevant for face-to-face experience: one will be connected with far-away places as if they were just outside one's window and even be able to smell the Swiss Alps and their '(digital) manure' when on the other side of the planet (Negroponte 1995, 7, 165).

As the Canadian author Vincent Mosco observes in the book *The Digital Sublime* (2004), Negroponte's writings on the digital world represent an unshakeable belief in the rise of a new way of life (Mosco 2004, 73). Indeed, no questions are asked about the move to a more immaterial kind of existence: 'the change from atoms to bits is irrevocable and unstoppable' (Negroponte 1995, 4). Digital technology and the Internet, then, run a course that appears independent of human intervention. They are astounding objects of trust and admiration that are elevated to a position higher than banal, daily existence, and have their own 'sacred and sublime mission', as Mosco puts it (Mosco 2004, 75).

Related to the idea that the material world was being marginalized was the notion that, as the Internet was 'fundamentally and profoundly *antispatial*' (Mitchell 1995, 8), it would have the effect of diminishing or even eliminating distances. This idea was elaborated in many publications, such as Frances Cairncross' *The Death of Distance: How the Communications Revolution Is Changing our Lives* (1997), *The Road Ahead* (1995) by Bill Gates, and various best-selling books by the 'digital guru' George Gilder. The recurrent theme in these books was that the Internet would not only make contact between great distances possible but facilitate instant exchange of materials digitally. Thus, Cairncross foresees that 'the death of distance loosens the grip of geography', causing borders and barriers to

break down (Cairncross 1997, 5), Gilder describes networked information technology as the agent behind the 'overthrow of matter' (Gilder 1990, 15-58), and Gates hails new ICT and the 'global information market' (Gates 1995, 6) as the means of making distance and geography less relevant or eliminating them altogether (Gates 1995, 6, 152, 181). Again, one can detect hopes of transcendence: the Internet is expected to give us power over matter and be the agent of a new kind of existence.

Internet, a Liberating Force

The idea that the Internet would grant humanity access to new powers was a recurrent theme in accounts about this new technology. In addition to the anticipated control over space and matter, hopes of greater personal power and autonomy were projected onto this technology. The Internet was expected to bring about a general de-centralization of power, eliminate all manner of intermediaries, lift limitations set on people by gender, race, social class or physical disability, and further democracy (Barlow 1996; Cairncross 1997; Dizard 1997; Dyson 1998; Mitchell 1995; Negroponte 1995; Rheingold 2002). *Newsweek* summarizes the ethic of the Internet as follows: 'voraciously free expression, a drive for individual empowerment, a loathing for authority and a strong libertarian strain' (Levy & Hafner 1995). At long last, what the American author Andrew Shapiro describes as 'control revolution' was to take place and make it possible for private persons to participate directly and more actively in decision making processes (Shapiro 1999).

The Internet and related new technologies would facilitate unknown freedom, create space for individual development and break down established social hierarchies. For instance, *Newsweek* imagined that they had potential to topple dictatorships:

> Obviously, the decentralizing nature of the computer poses a threat to dictators... But the same dynamic confounds managers everywhere, as computers and networks amplify the powers of individuals and twist the corporate organizational charts (Levy & Hafner 1995).

As Hand and Sandywell put it in their criticism of what they call 'e-topia' (utopian thought relating specifically to electronic communications media), under the influence of the Internet, future civic life was imagined as 'a continuous "town meeting" where active citizens devote most of their

time and energy to debating the public good to create a genuinely communitarian culture of self-reflexive civic subjects' (Hand and Sandywell 2002, 201).

The above-mentioned publication 'Cyberspace and the American Dream' is an exemplary illustration of such an e-topia. In this collective statement, ICT and the Internet are linked to aspirations that constitute American mythology. As the title of the document suggests, the Internet is presented as the next step in the realization of the American Dream and an appeal is made to the frontier mentality. The authors of the statement envision the Internet as the new American frontier, a fresh realm that has no established constraints and where everything is still possible. This is a place of complete pre-modern freedom: '[The Internet] spells the death of the central institutional paradigm of modern life, the bureaucratic organization' (Dyson et al. 1994). Together with the promises of new riches and domains to discover and conquer, the Internet was to offer liberty and self-determination. It came to be associated with one of the highest values current in the United States: the freedom achieved by the first settlers.

Internet, a Vessel of Religiosity

According to the authors of 'Cyberspace and the American Dream' and others, such as John Perry Barlow, the author of 'A Declaration of the Independence of Cyberspace' (1996), long-term dreams of liberty would be fulfilled and barriers would inevitably disappear. Others have claimed that the Internet would make us less dependent on the limitations of space and distances. Others still have declared the Internet to be the carrier of a lasting 'age of prosperity' (Schwartz et al 1999, title) and predicted a future of 'ultraprosperity' for everyone (Kelly 1999c). As Kevin Kelly puts it, 'the good news is, you'll be a millionaire soon. The bad news is, so will everybody else' (Kelly 1999c).

But, typically for the rhetoric of Internet enthusiasm, the precise reasons for these developments remain unclear. As Mosco points out, the discourse about the influence of digital technology, including the Internet, on society was filled with charismatic sentiments (Mosco 2004, 74). The Internet had gained special authority and its enigmatic powers were not questioned. With examples of writings by Barlow, Dyson and her co-authors, and others, such as MIT professor Negroponte, Mosco shows that the enthusiastic rhetoric about the Internet throve on stories of 'mythic transcendence' (Mosco 2004, 75). That is, the optimistic tales

about the Internet celebrated digital communications technology as a force that rises above the banal and is capable of performing wonders. As Mosco says, the idea propagated among a number of Internet pundits was that this technology represented a historically unique phenomenon that could not be compared to anything preceding it and therefore had an exalted value of its own (Mosco 2004, 82). Technology was deified: it had a logic of its own; it could not and needed not be explained.

Looking at the high expectations for the Internet, one cannot help but recognize an old vision of a long-awaited liberator that will eliminate oppressive systems and install a reign of freedom and independence. Without any clear links to religious tradition, this strong belief in better times nonetheless contains an essentially religious message: an all-powerful and awe-inspiring phenomenon will transform how we understand and experience the world. It will bring salvation, help us transcend to a new kind of existence and, above all, it will confirm with great clarity the defining values of our society: liberty and equality.

Judging by the amount of media coverage and the infiltration of the theme of the Internet beyond specialist literature into general popular culture, the belief in the power of the Internet to bring about great changes to life as we know it was a source of shared, public exhilaration. During the heyday of Internet enthusiasm a number of dedicated lifestyle magazines were born (*Fast Company*, *Mondo 2000*, *Wired*, and *Red Herring*) and the Internet was subject to intense attention from established general interest magazines as well. For instance, between 1993 and 2002, *Time* magazine featured the Internet and its many visionaries and heroes on its cover on at least twenty occasions. The election of Jeff Bezos, the founder of the web-based bookstore Amazon.com, as the magazine's Person of the Year in 1999 is a telling sign of the special status granted to the Internet in the public discourse. With Bezos' title, the Internet and enterprises related to it are honoured as phenomena of historical import for the world. Similarly, when *Newsweek* calls 1995 'The Year of the Internet' (Levy & Hafner 1995) or when *Wired* magazine claims that 'We're facing 25 years of prosperity, freedom, and a better environment for the whole world' (Schwartz et al. 1997), the emphasis is on the collective experience of something of great social and emotional significance.

According to Emile Durkheim, high-spirited communal expression of emotion or shared 'effervescence' is a key to the rise of religious feelings (Durkheim 2001, 164). It is at these instances that sacred objects are created, shared beliefs arise, and ties between individuals in a community are forged and strengthened. In the case of technophile enthusiasm for the

Internet, this sort of effervescence arose in the public discourse carried out via the journalistic media and publications by various visionaries. Albeit a completely different setting than the corroborees of the Australian Aborigines to which Durkheim refers in his discussion of effervescence in *The Elementary Forms of Religion* (1912/2001), the same processes were at work. Namely, in the discourse about the Internet, a transcendent object of reverence was constructed and a set of values and aspirations were articulated that served as the defining points in the formation of a specific worldview, that of the Internet Age.

Conclusion

As several authors have shown, in some form or another, religiosity continues to play a role even in secular areas where modernization and rationalization seemingly reign supreme (Alexander 2003; Aupers 2004; Szerszynski 2005; Wertheim 2000). In various disguises forms of religion exist that are uncoupled from official religious institutions and whose religiosity has therefore been obscured or ignored. While one may accept the claim that in some parts of the world, organized religion has lost the importance it once had, religion as such shows no signs of disappearing. In the modern, Western world religious sentiments are often integrated and implied in seemingly non-religious social phenomena.

The collective love for the Internet as it took shape in discourses in the media and other publications throughout the second half of the 1990s was one such vessel of religiosity. Religiosity manifested itself in the tales of paradigm change that envisioned the rise, or transcendence of humanity to a different kind of existence; there were religious facets to the representations of the Internet as a force capable of diminishing distances and controlling matter. Equally, the role of an agent of freedom and equality that was granted to the Internet has a religious significance, as it links technology to hopes of salvation. Furthermore, the techno-utopian dreams related to the Internet gave rise to collective emotions, provided shared objects of admiration and (re)articulated values that constitute the modern Western worldview (freedom, equality, progress).

As to the allusions to biblical tales, such the *Business Week* cover mentioned in the introduction to this paper, phrases such as 'the John the Baptist of the Digital Age' (Malone 2000), the characterization of a manager at Cisco Systems as an 'evangelist of the Internet gospel' (*Economist* 1999) or the description of the Internet as 'God's gift to marketing' (Millar

1996), these are primarily rhetorical tools. Although there are recognizable echoes of religious tradition, the use of such vocabulary does not necessarily mean that an explicitly religious agenda is pursued that binds the described object to specific dogmas. Rather, it is often a token of a more implicit form of religion, which is embedded in secular phenomena and institutions. In discourses concerned with technological inventions such as the Internet, terminology and analogies that refer to religious traditions are expressions of strong faith in the extraordinary power and the special, even sacred status of technology. They are employed in order to express technophile sentiments and values with familiar and suitably emotive vocabulary.

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Part Two

RELIGIOUS RESOURCES FOR THE ECOLOGICAL CRISIS

4   Re-Imagining the Human-Environment Relationship via Religious Traditions and New Scientific Cosmologies

Tony Watling

Introduction

This article explores how a number of religious traditions and science-based cosmologies (as represented in a 'field of religion and ecology') understand nature, particularly in response to the environmental crisis, using metaphors, myths, and symbols, to 're-imagine' it, attempting to create new environmentally-friendly meanings and actions.[1] The environmental crisis in this sense is seen as being not only economic or technological but also moral and spiritual, based on a modern, Western, Enlightenment worldview (and associated secular/scientific myths) that sought to liberate humanity from dependence on nature, via reason and progress, but has, however, developed into an anthropocentric desire to master and transcend nature, replacing previous animistic, experiential, holistic, ways of perceiving the environment, with a mechanical, objective, reductionist view, with humanity separated from a commodified nature (separating mind/body, matter/spirit). This has led to a disenchantment and ecological illiteracy (the earth being denied spirit or subjectivity, being measured by economic or technological standards).[2] Such perceptions about humanity and nature, then, have been seen to become dominant, defining reality, leading to destructive ecological responses. However, such a way of looking at the world is also seen as socially constructed; nature is a diverse and malleable concept, always a social practice. It is argued therefore, that what is needed is a critique of the construction of reality, dialogue about and counter views of (a politicization of) nature; new worldviews with new ecological myths, embracing organic, subjective, or spiritual, views, reconnecting humanity with nature, enabling eco-

logically orientated lifestyles, respecting and caring for the environment (Cronon 1996; Callicott 1997; Gardner 2002; Maxwell 2003; McGrath 2003; Metzner 1994; Oelschlaeger 1994; Soule 1995; Tucker 2002; Tucker and Grim 2001; Weiming 1994).[3]

It is argued that a new imaginative language is needed to re-root humanity in the earth. Metaphors are seen as being fundamental to this process. They express fundamental concepts through which humans understand and organize experience, having the power (rational, emotional) to create (personal, social) reality. They may thus be crucial for re-creating the conception of the world and the human place within it. Cosmogonies, or creation stories, for example, locate the present in sacred time, providing a common cognitive legitimacy and meaningfulness, linking moral orientations to cosmic origins. They create feelings of belonging, divulging humanity's connection to a wider scheme, highlighting its role and destiny. Rethinking or re-appropriating accounts of creation may thus stimulate a rethinking of ecological behaviour. Such ideas link to myth in that they provide a meaningful and powerful imaginative or symbolic narrative that orients humanity, providing the basis for knowledge and wisdom, and evoking ways of interpreting and acting within the world. Such images are cosmological, relating to the origin, order, and meaning, of the cosmos and the human condition. They relate 'truths' and principles that define possibilities and limitations, being the basis of creative activities of cultures. Humanity in this sense has been described as a 'mythopoeic' species, unable to exist without narratives or stories through which to understand, engage, and order, the world. Hence, to effectively address the environmental crisis it is argued that humanity must attend to its stories; creating a (metaphoric) re-imagination of the world and the role of humanity within it (Bolle 2005a; 2005b; Callicott 1997; Lakoff and Johnson 1980; Long 2005; Oelschlaeger 1994; Tucker 2002).

Traditionally, religion has provided such narratives, but in the modern world religion is seen to be in decline and lacking relevance; religious traditions are losing control of social life to secular bodies, their beliefs no longer providing existential meaning (e.g. secularization). However, religion may not be so static or unitary a phenomenon as previously thought (neither may secularization; such ideas may be a consequence of an objective, rational Western bias, creating an 'official' 'religious' category and ignoring unofficial views). It may rather be a complex, dynamic process of individual and social, official and unofficial, actions in particular contexts. Religion may thus be capable of interacting with new developments, creating new meanings, and re-ordering personal and social beliefs and

identities (albeit in more diverse and fluid forms) (Beyer 1994; Casanova 1994; Woodhead and Heelas 2000). This may be especially so as recent social changes (economic, scientific, technological), and their often deleterious effects on the environment, cause instability and moral dilemmas while isolating individuals from the moral resources needed to address them. In particular, it has been argued that religion can be useful (even essential) in addressing the environmental crisis. Religious traditions (with histories of ethical reflection and frameworks of myths and symbols) are seen to go beyond egoism and materialism, stressing the sacredness and order of nature, defining humanity's place in it, highlighting its obligations to it, providing meaningful guidance. They are thus thought to have the (metaphoric) means, the critical and prophetic potential, and the influential moral authority to re-imagine the environment (and humanity), to contest dominant views of it, and to provide new values and social direction through creating, recovering, and expressing, ecologically oriented metaphors, myths, and symbols (Beyer 1994; Gardner 2002; McGrath 2003; Oelschlaeger 1994; Tucker and Grim 2005).[4]

To provide such ecological re-imagination, however, religions traditions may need to be re-interpreted in a more eco-centric way. Judeo-Christianity, for example, has been seen as being too anthropocentric, and possibly anti-environmentalist, stressing humanity as dominant and nature as passive. Many religions have been seen as world-denying, concentrating on human salvation alone, or as being part of political regimes that are ecologically destructive.[5] Such an ecological awareness of religions – what is seen as religion entering an 'ecological phase' – has been growing over a period of time, and has been termed the 'greening of religion' (Nash 1989; Tucker 2003). In particular, there is a growing 'field' of 'religion and ecology', a range of academic and religious literature and actions exploring and promoting eco-religious ideas, deepening spiritual awareness of nature, and encouraging ecological activism (Tucker 2003; Tucker and Grim 2001; 2005; Watling 2008a).[6] Such initiatives aim to engage the transformative possibilities of religion, reclaiming and reconstructing traditions so as to promote flourishing human-earth relations. They aim to reconceptualize religious attitudes to nature and to create a cross-cultural reservoir and mutually enriching dialogue of imagination, commitment, and wisdom, providing interdependent ecological ethics based around the common ground of the sacred reality of the world, while still being sensitive to the cultural and historical context (assessing and using religions in a self-reflective, not self-promoting, way; respecting claims to truth, but exploring different avenues to truth) (Callicott 1997;

Oelschlaeger 1994; Tucker 2003; Tucker and Grim 2001; 2005). In this way, new 'religious' views may emerge alongside traditional ones. In particular, in this light, science is seen as a possible source of new views, offering meaningful resources for understanding the world and humanity's role in it, as well as combating environmental problems by suggesting new ways of acting, particularly since it is considered as having plausibility as well as global reach, and as being able to co-exist with and encompass other views. Such science is not envisaged as materialistic, objective, or reductionist, however, but rather interdisciplinary, holistic, and organic, possibly spiritual and teleological, what has been called 'deep' science, an imaginative epistemology of rational empiricism and spiritual awareness (a 'scientific paganism'). This is seen as science entering its 'wisdom phase' and encountering mystery and meaning (possibly synthesizing with religion), going beyond purely rational explanations and objective facts, and using metaphor, myth, and symbol, to inspire new (subjective) visions of the environment and the human place in it, creating intimacy and inspiring reverence (Barlow 1997; Brockelman 1999; Callicott 1997; Griffin 1988; Maxwell 2003; Metzner 1994; Taylor 2001).[7]

It is argued, then, that cross-cultural comparisons of (and dialogue between) religious and scientific concepts of nature, human nature, and human/nature interaction, are needed to enable engagement with ecological issues. New 'earth literate' religious or science-based cosmologies, highlighting the (holistic, organic, spiritual) cause, nature, and purpose of life, reconnecting and re-integrating humanity and nature (mind/body, matter/spirit) are seen as possible foundations for ecological ethics and actions in relation to the environment and the human place in it, able to inspire new visions and provide new guiding myths. In this article, therefore, I qualitatively and ethnographically explore such ideas by analyzing and comparing new ecological views being stressed among two Eastern and two Western religious traditions, Buddhism and Chinese religions and Judaism and Christianity,[8] as well as two science-inspired cosmologies, Deep Ecology and Gaia[9] (stressed in the field of religion and ecology).[10] I analyse and compare the ecological metaphors, myths, and symbols stressed, exploring what they say about nature and the human place in it and examine what this may mean for future (ecological, scientific, religious) identities and actions. I will examine how religious and scientific individuals and traditions may be re-assessing their views, recovering forgotten ecological themes or stimulating new ones, while exploring and highlighting how religion and science are creatively and dynamically being re-addressed in the modern context.

Eastern Religious Traditions and Ecology

Buddhism

'The Six Great Elements are interfused and are in a state of eternal harmony. The Four Mandalas are inseparably related to one another. When the grace of the Three Mysteries is retained (our inborn mysteries will) quickly be manifested. Infinitely interrelated like the meshes of Indra's net are those we call existences' (Ingram 1997, 75).

These lines of an esoteric Shingon Buddhist poem are, for Ingram (1997), seen as highlighting a Buddhist, organic, holistic view of nature. Here the six elements, earth, water, fire, wind, space, and consciousness, highlight the timeless, non-dual, harmony of the universe, all life arising simultaneously with mutual causality via their interaction, with the aim of existence the awareness and experience of this. To achieve this awareness, four mandalas (paintings of Buddha in colours representing the interpenetrating elements) encourage meditation towards harmony with nature, integrating the three mysteries, body, speech, and mind. This is correlated with 'Indra's net' of many-sided jewels, each reflecting the other, highlighting their (and the world's) interdependence. If one jewel becomes cloudy (e.g. environmental pollution, species decline) or clear (e.g. environmental clean-up, species protection) this is reflected in the others (unbalancing or balancing the whole, emphasizing humanity's wider connections and responsibilities) (Barnhill 1997; Callicott 1997; Kaza 2002; Loori 1997; Sponberg 1997; Swearer 2001).

Such ideas highlight 'Green Buddhism', a movement using Buddhism as a source for eco-friendly advice. In this scheme, Buddhism is seen as an 'ecological religion' with concern for nature integral to its beliefs and practices. Buddha's Four Noble Truths – the universal reality of suffering, the cause of suffering through desire, freedom from desire as freedom from suffering, and freedom as lying in moral discipline and spiritual depth – are especially highlighted for their ecological importance. In this sense, the basis of any Buddhist 'eco-ethics' is the recognition that suffering is caused by *trishna,* a selfish attachment to existence ('I self'; alienation from the world), and that to overcome this requires moral and spiritual learning in order to realize the 'true' nature of reality, which is the ontological interrelation of the world ('we self', uniting with the world), and hereby experience 'enlightenment'. These ideas are linked to Buddhist teachings of *dharma,* meaning a path to truth and things in nature, highlighting interdependence, that all inner and outer phenomena are inseparable: all

beings are *dharmas* or have '*dharma* nature', a universal essence, and the potential to attain enlightenment through acting compassionately, cultivating interdependence, and creating *sangha*, or community. In line with this the doctrine of *karma*, or cause and effect, and the concept of *samsara,* or rebirth, where all thoughts, words, or deeds, shape experiences, affecting the whole, are also seen to link life in the (moral) continuum of the enlightenment process (and stress human responsibility to wider nature) (Barnhill 1997; Callicott 1997; Gross 2002; Kaza 2002; Loori 1997; Sponberg 1997; Swearer 2001).

Enlightenment, then, is the path not only to truth and a fuller realization of existence, but also to environmental, personal, social, and spiritual health. To achieve it involves, for Swearer (2001), a 'particular-general principle' process, following the Buddha's example: understanding personal karmic history, then the karmic history of humanity, and finally the principle underlying the cause of suffering. This is seen, by Sponberg (1997), as a 'hierarchy of compassion' where, unlike Western individualistic views, 'progress' is an evolution of consciousness toward the awareness and cultivation of interdependence: more evolved beings accept inter-dependence and thus have greater compassion, wisdom, and responsibility, towards life. This is a progress that moves away from selfishness and consumerism, a 'virtue ethic' involving the 'threefold learning' of morality, meditation, and insight, leading to a 'mindful awareness' and 'middle path' moderate lifestyle, overcoming dualism (self-denial/self-indulgence), providing stability and balance. To achieve it involves using nature as a teacher of balance and interrelation, or abiding by traditional 'precepts' such as not creating evil, practicing good, or being truthful (the 'eight-fold path' of right understanding, intention, speech, action, livelihood, effort, mindfulness, and concentration). In this scheme simplicity and discipline of lifestyle is a moral virtue, something highlighted by Buddhist temples and monasteries, which are seen as ideal eco-friendly *sanghas* or communities (and whose example can be enlarged globally in a 'Great Earth *Sangha*') (Gross 2002; Kaza 2002; Loori 1997; Maguire 2000; Palmer and Finlay 2003; Sponberg 1997; Swearer 2001).

Chinese Traditions (Confucianism and Daoism)[11]

In ecological terms, Chinese religions are stressed as sharing a worldview that is organic, vitalistic, and holistic, seeing the universe as a creative, harmonious process (what is termed *sheng-sheng*, or 'production and reproduction'). In this scheme the universe is complete and self-generating,

combining heaven and earth, spirit and matter, with all things interdependent via ongoing relationships, and the aim of life is to realize harmony with natural rhythms of the cosmos – what is seen as 'the Way' (*Dao*), the 'primeval wisdom of reality'. This dynamic of harmonic relationships is seen to occur through the cosmos being filled with *qi*, a vital energy that links the material and spiritual, composed of and expressed via two complementary elements, *yin* and *yang*, in balanced interaction (represented in opposites, e.g. positive/negative, male/female). Relational change, therefore, is the principal characteristic of nature and (correct) human existence is the process of flowing with rather than resisting this change (in this sense there may be good and bad ways of channeling *qi* with Chinese gardens, medicine, painting, or *feng shui*, argued as producing relational balance between landscape or objects, allowing *qi* to flow) (Kinsley 1994; Maguire 2000; Tucker 1994; Weiming 2002; Weller and Bol 1998). Confucianism and Daoism are seen to interpret and experience this worldview in different ways: the former stressing the secondary causality of humans and a harmonious human society via social and political commitment, the latter stressing the primary causality of the *Dao* and a withdrawal from social and political affairs and spontaneous closeness to nature. Confucians thus encourage a rethinking of individual/society/ nature connections, stressing moral education and responsibility and a moral ruler representing humane government and ethical practice, while Daoists encourage re-examination of human/earth relations and the unfolding of natural processes and see the non-involved hermit as an ideal (Tucker 1994; see Callicott 1997; Kinsley 1994).

Confucian views are seen to involve 'cosmic humanism', focusing on human society and virtues. Humanity forms 'one body' with the cosmos (virtue of *qi*) but has a special role: it has the highest expression of *qi* and most sentience, and is, therefore, charged with enhancing the balance of nature. This is seen as an 'anthropocosmic' view – a unity and mutual responsiveness of Heaven-Earth-Humanity. Humans are situated within the organic processes of nature and exist in concentric circles of relationships – family, community, nature (a kinship based on *qi*) – with a mutual reciprocity of obligations and larger sense of common good. The Mandate of Heaven, or moral law, thus enjoins humans to take part in cosmic transformation. This requires a 'relational resonance' in tune with a 'cosmic resonance' – a mutual (moral) response to myriad things. In this scheme, human thoughts, feelings, and actions, respond to movements of *qi* in the world. Furthermore, there is a proper or appropriate response to this in accordance with *li*, or patterns of the cosmos. 'Authentic' Confu

cian humanity, then, involves continuous self-transcendence, overcoming egoism through practicing *jen*, or 'humaneness', something that is exemplified by the 'sage', who is attuned to the environment (with the *Dao*), instantiating the perfection of natural order in thought and action (Adler 1998; Callicott 1997; Cheng 1998; Maguire 2000; Weiming 2002; Weller and Bol 1998).

Whereas Confucianism is seen to stress cultivation of self and nature, Daoism is seen to stress nature for its own sake, seeing simplicity, spontaneity, intuitive knowledge, and non-interference as appropriate ways of interacting with the world. This is described as *wu-wei*, a 'non (assertive) action' that is indirect and respectful, involving 'feminine' behaviour (yielding rather than asserting, soft rather than hard), eliminating competition or desire. In this sense 'appropriate' actions are those that produce the best results from minimum effort, avoiding over-doing. The aim is to penetrate beyond the physical to the primordial essence of *Dao* and mirror its operation (something termed 'self-so'). The aim is to be like water – soft and yielding, yet able to wear away rock – a potentiality of generative action. This follows the *Dao*, which is empty and full of potentiality, allowing things to develop in their own ways. 'Daoist ecology' then, in this sense, is not an intellectual principle; 'knowing' involves comprehending existence though relationships attending to the rhythms of the cosmos, not 'improving' them. Daoism trusts the world and natural processes to operate as they are supposed to – in harmony. Non-action is compassionate whereas action can cause unintended problems by upsetting the harmony (therefore, if things run counter to the harmony of nature they must be abandoned even if they are in human self-interest). The practical result of this is asceticism, training the will to follow nature's ways (Ames 2001; Callicott 1997; Kinsley 1994; Kirkland 2001; Tucker 1994).

Western Religious Traditions and Ecology

Judaism

Jewish ideas on ecology are seen as integral to relationships between God, humanity, and the world. In this scheme, the world belongs to God, who created it (and renews this creation daily), and created everything 'according to its kind', assigning unique value to species and arguing for their conservation; all species thus have meaning and purpose and need to be respected and cared for due to their God-given place and role. God thus has regard for all of creation, its individual species and its overall pattern.

Bio-diversity in this sense relates to the rightness of God's pattern for creation which meets His intent independent of human concerns or notions of cause and effect. The world in this sense is an allusion to God, full of His glory, and an object of divine concern (inspiring amazement and humility, tempering human egoism) (Goodman 2002; Hutterman 2002; Rose 1992; Solomon 1992; Tirosh-Samuelson 2001; Waskow 2002).

In line with this, the concept of *bal tashchit,* or 'do not destroy', is stressed. This is seen to emphasize that creation is to be conserved and not wasted. This is also seen as highlighting a Jewish 'tradition' of moderation, limiting lavishness and conspicuous consumption – creation is God's gift, humanity is to help preserve and improve it, being of the earth but also (virtue of *imago Dei*) its crowning achievement, this conferring privilege and also responsibility; humanity is a caretaker or steward leasing the land in covenantal trust (not the owner of it) (Goodman 2002; Jacobs 2002; Solomon 1992; Tirosh-Samuelson 2001). Maguire (2000) highlights the theme of exile in this, seeing humanity being alienated (via egoism) from its true role and its destiny of a harmonic Eden, which is a vision of the future, a 'promised land' not yet reached. Judaism's historical escape from destruction, in this sense, thus mirrors humanity, which exists in a lost desert at present. Along these lines, Jacobs (2002) emphasizes *teshuva,* repentance or 'beginning again', and argues for an 'ecological *teshuva*', restoring harmonious ecological balance (also related to *tikkun olam* or 'repair of the world'). Such a new, repentant humanity creates justice (*sedaqah*, argued as being the heart of Judaism), for people and nature, via the cultivation of both. In a similar vein, Palmer and Finlay (2003, 115) argue that all creation deserves mercy (Psalm 89: 3 'the world is built on tender mercy'). Humanity, therefore, is restricted in its use of nature, forbidden to show cruelty, or take excess, but rather has to prevent suffering (Goodman 2002; Solomon 1992).

Along similar lines *kashrut* or the kosher code – food obligations and restrictions as a connection between Jews, the land, and God – is stressed and extended in an 'eco-kosher' code. Humanity's consumption of coal, oil, and wood, in this sense, may be seen as a form of idolatry, and needs to be consumed in a more sacred (less polluting, wasteful) way. In line with this blessings, festivals, prayers, or rituals (*Rosh Hashanah*, *Sukkot*, *Tu B'shevat*) that purify the body via consumption of food and express gratitude for creation, are seen as creating a sacred connection to the earth (and bearing witness to God's power in it; similarly biblical injunctions to avoid cutting fruit bearing trees are symbolic cynosure of human responsibility to nature). In line with these ideas *Shabbat,* the sabbath or

rest day (month/year), a retreat from labour or consumption and mnemonic of humanity's ties to nature (argued as the last thing God created but first in intention), is seen as restoring nature's balance (Goodman 2002; Green 1996; Jacobs 2002; Pick 1992; Rose 1992; Tirosh-Samuelson 2001; Waskow 1996; 2002). Such ideas highlight that religio-moral purity is necessary for residence in God's land; the flourishing of nature and humanity are causally linked; following God's ordinances, especially the Torah, ensures prosperity, doing otherwise causes suffering. In this light Fishbane (2002) envisages an 'Oral Torah', where the world is an expression of God's breath, a syntax of His wisdom embodied in existence, and argues for (emotional, physical, spiritual) alignment to its natural rhythms via prayer or ritual. Such ideas link to the Jewish mystical tradition that respects and reveres nature through seeing God revealed in it, highlighting communion with nature as being communion with God. Kabbalism, for example, sees an underlying divine reality behind the corporeal world, connecting the many (creation: H-W-Y-H) to the one (God: Y-H-W-H, the 'primordial Torah') with humanity's task being the realization of this. Such ideas are also linked to the Hasidic ideas of Martin Buber, especially the 'I-Thou' relationship, where the aim of existence is to relate to nature via the 'whole being', nature being a 'waiting Thou' (connected to God, the 'eternal Thou') not an 'It' (Gellman 2002; Green 2002; Hutterman 2002; Tirosh-Samuelson 2001; Waskow 2002).

Christianity

Within Christian attitudes to nature, several themes are stressed: God created a good (harmonious) world; God created humans in His image (*imago Dei*) from the world to have a relationship with Him (and creation); humanity sinned against this by seeking self-awareness, becoming alienated from God (and creation); God provides the means to overcome this in a 'new creation' in Jesus (God dwelling and suffering in creation) and the subsequent passing on of the Holy Spirit to the Christian community. To these themes can be added Jesus' commandments to 'love God' and 'love your neighbour', and the Old Testament statement that the 'fear of God' is the beginning of wisdom. These themes provide the groundwork for what has been described as an 'ecological reformation' to an earth-centered Christianity that values and cares for nature. Central to such ideas is the 'integrity of creation', the idea that the world is created and sustained by God (His 'breath', *ruah*), being a gift and covenant, to

reveal His creativity. God, in this sense, loves nature and its creatures and cares for their well-being (giving them intrinsic value). To love and care for them is thus to love and care for God, to abuse them is to abuse God. Nature in this sense worships God in its being and to worship God in a human sense means caring for it. Nature in this respect is also a means to know God (His 'Book of Works'), not only by the learning of it but also by 'experiencing' its 'being' (subjectively interacting with it) (Callicott 1997; Deane-Drummond 2004; Kinsley 1994; McFague 2000; McGrath 2003; Page 1992; Reid 200; Wallace 2000).

Humanity's role in creation is a somewhat privileged virtue of *imago Dei*. However, this is interpreted not as giving it dominion over nature but as giving it responsibility for it: humans are seen as 'stewards', in fellowship (being neighbours) to other creatures, embedded in nature yet given the task of tending it, being channels for God's grace. This is God's intention for them, a benign authority exercising power with praise and humility (hence biblical sayings emphasizing this, such as 'salt of the earth' or Jesus as 'vine', and the 'sabbath' principle, letting the earth rest and recover, as well as rituals using earth elements, such as bread, oil, water, wine). However, the effects of sin are seen to have affected this, with humanity not caring for creation as God intended; humanity is seen as fallen and self-centered, alienated from creation, and harming it. To recover a right (harmonious) relationship to creation (God), in this sense, means overcoming sin. To this end God became incarnated in Jesus and embodied in nature, highlighting its special-ness and pointing to its redemption (ideas of the 'cosmic Christ' also see Jesus redeeming not only humanity but all of (cosmic) creation). Nature in this respect is also seen as part of God's body or a sacrament of God, such ideas arguing for a sacramental approach to it, accepting it as evoking/mediating the sacred and interacting with it in a relational (Trinitarian) 'I-Thou' relationship (Callicott 1997; Deane-Drummond 2004; Kinsley 1994; McFague 1996; McGrath 2003; Page 1992; Reid 2001; Ruether 2000).

Along similar lines the Holy Spirit, present at creation as a life-giving force and still dwelling in the world, courtesy of Jesus, is seen as providing a useful approach to nature, giving intrinsic value to life and providing the 'power of becoming', the possibility of redemption and capability of attaining the perfection of (a new) creation. In this sense it guides humanity in discerning the appropriate (harmonious) way of interacting with nature (fulfilling humanity's role of bringing creation to fulfillment). In a similar way the concept of 'Wisdom', also seen as inherent in creation and dwelling in the world, is seen as providing an eco-friendly Christianity. A 'wise'

interaction with nature, in this sense, is seen to be based on a 'practical wisdom' or 'virtue ethic' of justice, prudence, and temperance; a natural law in dialogue with human inclinations (Deane-Drummond 2004). Wisdom is also seen as female, and eco-feminist ideas have also been seen as a way of being critical of the modern worldview and creating care for nature. In this sense, there is a need to overcome patriarchal dominance (God as transcendent, male) and its dualism (mind/body, matter/spirit separation), which destroys nature, through seeing God/nature as mother, something that is seen to highlight God's immanence and promote ideals of care and harmony. Such ideas also link social justice to environmental justice; nature becomes the 'new poor' with ecological and social degradation occurring in 'sacrifice zones' while 'eco-living' requires social inclusion and 'fair consumption' (Edwards 2001; McFague 2000; McGrath 2003; Ruether 1992; 2000; Wallace 2000).

New Scientific Cosmologies and Ecology

Deep Ecology

Deep Ecology has been described as a philosophical, political, scientific, and social movement as well as a nature religion, rethinking human identification with nature (traced to intuitive experiences of nature (of ecological diversity/symbiosis) by field ecologists). Inspired by the science of ecology that holistically studies ecosystems it sees nature as intrinsically valuable, rather than for use as in 'shallow ecology', with humans embedded in it. Its worldview, 'Ecosophy T', is seen as an ecological wisdom (combining 'eco' or earth and 'Sophia' or wisdom), based around a 'wide identification' thesis and an ultimate norm of 'Self-realization', being a 'relational total field image' stressing 'bio-spherical egalitarianism'. Its essence is to ask questions about humanity, society, and nature, going beyond factual science to the level of self and earth wisdom, leading to an awakening of wholes greater than the sum of their parts, seeing through what it sees as the illusory and erroneous modern worldview (Devall and Sessions 1985; Kinsley 1994; Macy 2002; Naess 1991, 1995; Sessions 1994; Taylor 1996). This is seen as a 'transpersonal ecology', moving from personal identification, the experience of commonality through personal involvement, to ontological identification, the experience of commonality through a sense of or openness to being; a wide, field-like, sense of Self with no ontological divide in existence, no bifurcation between human/non-humans. This is argued as leading to 'Self-realization': nature (and all

the individuals, human/ non-human, of which it is comprised) realizing itself (becoming fulfilled). This is seen as a psychological/social/ecological maturity, stressing that humanity underestimates itself by equating self with ego; with sufficient maturity it cannot avoid identifying with nature as it is in, of, and for it, in its very being. Self in this sense equates to organic wholeness, an 'ecological self', where humanity is grounded in the metaphysical fact of interconnectedness, this leading to an ecological lifestyle of harmony or equilibrium. Thus it is natural for humanity to care for nature, for its true humanness is part of it; acting more environmentally friendly in this sense creates greater happiness and satisfaction (Devall and Sessions 1985; Fox 1990; Kinsley 1994; Naess 1991, 1995; Sessions 1994).

Such a deep-ecological self is seen as possibly tapping into an innate eco-friendly humanness, what has been termed 'Biophilia'; a tendency to focus on and care for life and lifelike processes (opposite is 'biophobia', aversion to nature). This is a human dependence on nature, an emotional need for a deep and intimate association, something that is seen as part of humanity's evolutionary heritage, evolving in a bio-centric, not machine-regulated, world (and shaped by cultural patterns through which 'primal (indigenous, tribal) cultures' integrated into the world). Such a love of life and right relation to nature is seen as the key to (continued) human existence, a sign of mental/physical health; humanity's sanity depends on it (environmental degradation is thus a deprived existence). An ethical responsibility for nature, then, in this sense, is an aesthetic, biological, cognitive, emotional, and spiritual, imperative (Kellert 1993; Wilson 1984). Such a view of humanity and nature has been seen as 'eco-psychology', exploring the foundations of human nature, expanding the human self, and healing its alienation from nature. This sees the needs of the planet and the person as a continuum (human nature being embedded in the world, as it is often thought to be so by primal peoples). Here, psychosis is an environment-deficiency disease with modern humanity 'ontogenetically crippled', immature, and neurotic, separated from true (sane, mature) feelings of connection. Thus the aim is to awaken healthy (earth-connected) human nature; a transactional, relational, ecologically grounded form of animism (Macy 1996; Roszak 1993).

Ritual is highlighted as a practical part of this, reconnecting humanity to nature through re-experiencing the earth. Examples of these types of ritual are: shamanic or traditional healing rituals as practiced in primal peoples, discoursing with the spirits of nature; or in a modern sense, the Council of All Beings, a communal 're-earthing' ritual, creating an expe-

rience of intimate connection to nature, giving voice to the earth's suffering, and creating a commitment to defend it, awakening a 'shamanic personality' (Roszak 1993; Seed, et al. 1988; Macy 2002). Deep Ecology thus also embraces spiritual aspects of reality, having Buddhist, Christian, Confucian, Daoist, Hindu, and Jewish influences, especially with regard to self-realization and the oneness of/reverence for life. For example: the right to live and blossom for all and the desire to achieve liberation from egoism and cultivate/realize an interconnected self, based on a harmonious underlying principle, where order is emergent, and diverse parts enrich each other via non-violence instead of destruction. In this sense it has an ethical and religious attitude of valuing nature for its own sake and seeing it as divine or spiritual. It thus may be the newest and oldest religion and an emerging corpus of myth, symbol, and rite, awakening human nature to its connections with, and responsibility for, the environment (Barnhill and Gottlieb 2001; Gottlieb 1996).

Gaia

The Gaia hypothesis considers the activities of living organisms using the earth's atmosphere and changing its composition. The earth – named 'Gaia' after the Greek earth goddess – in this sense is a complex 'cybernetic' or feedback system seeking an optimal physical and chemical environment for life. It is a self-regulating (autopoietic), interdependent, entity, an organic whole greater than the sum of its parts, possibly a living thing (a super-organism). It is served by its constituents, adjusting and regulating itself in the same way that the organs of a body serve a person (what is seen as 'geo-physiology' or 'wisdom of the body'; and it may thus have vital organs, e.g. rain forests, keeping the whole stable and needing to be protected). The earth can be considered the unit of colligative evolution, with self-regulation emergent, and it may thus be organized or behave purposely, being animate, with spirit or consciousness (the culmination of a living process, analogous to an embryo). In this sense, understanding and enabling the processes of regulation, rather than unbalancing them, may be planetary medicine, something that may be humanity's natural role; acting within the system rather than outside it (Callicott 1997; Joseph 1991; Lovelock 1979; 2000; Midgley 2001).

This idea of the world as alive has been held throughout history: Goddess religion especially celebrated the ongoing rhythm of life, death, and regeneration, seeing the earth as the source of being, a living force, concerned with creative, peaceful interaction. A Gaian 'rebirth of the god-

dess' thus stresses humanity as part of nature, able to call forth its power, such intuition of the aliveness and interconnectedness of the earth seen as able to lead to a responsibility to all that lives, inspiring a less materialistic society. Re-embodying the goddess in the human self in this way is seen as a sacred psychology recovering intimacy with and tapping into a natural earth creativity; an awakening, re-birthing, re-indigination, recovering a lost sense of place, and 'primal perception' leading to a 'primal mind' in healthy interdependency (humanity's natural experience, exemplified again by primal/tribal peoples) (Callicott 1997; Christ 1997; Gadon 1989; Joseph 1991; Lovelock 1979). Such female-centered views are seen as partnership based, being about connection and wholeness, nourishment and therapeutic action, enabling and enhancing, not dominating and destroying life. They are related to eco-feminism, analyzing ecology from a female point of view, locating environmental degradation in (rational, dualist) male thinking, seeking to reintegrate humanity with nature and create life-sustaining mutuality and relationality through (intuitive) care, compassion, and empathy; a cultural, psychological and spiritual earth healing; healing relationships between men/women, humanity/earth. A healed society in this sense is one of non-dominating relations, a biospheric community of biophilic mutuality (humanity's destiny is of and for the earth and it needs to listen to the voice of Gaia and respect other life-forms as inherent parts of the energy that it is a part, acting with responsibility) (Adams 1993; Eisler 1990; Ruether 1992; Spretnak 1989).

Such an ethic of care links to autopoietic or ecosystem ethics, an ethical holism where individual interest lies within the whole. Life in this sense is a process of autopoiesis, or self-production, constantly renewing parts (organisms) to form a whole (the earth); humanity therefore co-evolves and is dependent on other life/earth in a 'Gaian body wisdom'. The world is thus a pattern of reciprocal relations, or 'gift events', impelling responsibility and commitment. Related to religion, this sees God (autopoietic and participant in the evolutionary process) as the original giver in an ontological or relational theology of the sacred whole. Such a Gaian perception shifts the locus of creativity from humanity towards the world, the two being living presences in reciprocal interaction. Human creativity thus is an elaboration of a deeper (holistic) creativity and it may be psychologically (and evolutionary) rewarding to interact with the earth in a particular (balanced, co-operative) way (or unrewarding to do otherwise) that has been termed 'Gaiasophy' (linking Gaia to another female concept, Sophia or wisdom). This idea of communicating with an animate earth is seen as shamanic wisdom; an innate ability to tap into a 'super-

sensory' awareness or energy field of the earth (dissolving the boundaries of ordinary perception, divining the spirit of the earth), rediscovering the reciprocal energetic relationship with a dynamic earth – a 'shamanic renaissance' or 'geomantic revival' that Deveraux et al. (1992) call 'Earthmind' (Abram 1990; Callicott 1997; Joseph 1991; Lovelock 2000; Midgley 2001; Primavsi 2000; Sahtouris 1989; Zoeteman 1991).

Conclusions

The present environmental crisis is seen to be a result of a dominant modern worldview delineating assumptions about reality that are anthropocentric, materialist, economic and technology-based, separating humanity from and devaluing nature. Addressing this crisis is seen as requiring a challenge to this worldview, a politicization of nature and an ecological re-imagination; creating new empowering conceptual schemes reconnecting humanity (psychologically, socially, spiritually), to a re-envisioned nature and simulating new ecological ethics and environmentally friendly thought and action. Religious traditions (reinterpreted, beyond anthropocentrism, embracing the whole of creation) and new scientific visions (more holistic, interdisciplinary, spiritual) are thought to be able to provide such challenges and new conceptual schemes, acting as channels for humanity to reconnect to nature and articulate ecological concern, being avenues for the re-imagination of nature and the human role in it (both religion and science are seen as pertaining to the construction of reality, with emotional and rational, personal and social, influence, frameworks of metaphor, myth, and symbol, moral authority, and plausibility). Such a 'greening' of religion and science is occurring within a field of religion and ecology that seeks to inspire religious traditions and science-based cosmologies to explore and express ecological metaphors, myths, and symbols, and provide a mutually enriching dialogue between them.

In this article I have analysed such ecological re-imagining among two Eastern and two Western religious traditions and two science-inspired cosmologies (as represented in the field of religion and ecology), exploring the ways they (metaphorically) express ecological awareness. Eastern religions, like Buddhism and Chinese traditions, see nature as a balanced, interconnected, process, an egalitarian, reciprocal, web of life. Humans have (natural) abilities to enhance this ecological balance, through tapping into a natural underlying life energy via an expanded sense of self, freed from selfish desires, through awareness of a particular/ general, per-

son/cosmos, linked and acting in a careful, sensitive way, creating community. Western religions, like Judaism and Christianity, by contrast, envisage God as creating and sustaining a harmonious nature (that alludes to God), giving it intrinsic value. Humanity has a special but flawed place; charged with tending nature but failing due to sin, only recovering by embracing the spirit of God/nature and behaving in a caring, humane manner. Lastly, the cosmologies of Deep Ecology and Gaia stress identification with an earth that is a living, self-regulating, symbiotic organism. Humanness, in this sense, is realized in interconnectedness, via an innate attachment to existence, that is psychological, social, and ecological, and related to health, maturity, and sanity; a primal perception of biophilic mutuality, achieved via myth and ritual, compared to (Goddess) religion and female ideas of caring relationality.

Such religious and scientific re-imagining challenges dominant modern conceptions of humanity, nature, and human-nature interaction, both personal (ideas of self-identity) and public (consequences of ecological problems). Although expressed in diverse ways, such re-imagining has a common purpose and commitment (re-enchanting nature, curtailing human action by tying human morality (and prosperity) to (prosperity of) the environment, seeing progress in an ecologically holistic way). Common (possibly convergent, syncretic) ideas and themes can thus be witnessed (science-inspired views in particular incorporate religious or spiritual ideas, while both converge on the overall ecological ideal of a harmonious, sustainable humanity and environment): the environment is seen as having intrinsic worth, virtue of (continuing) creation, independent of human values, being envisioned as an interdependent whole; it is a reciprocal web of life infused with a flow of energy or spirit embodying the divine; humanity, virtue of self-consciousness, has a limited but special role, being part of the web of life yet also enabling creation to achieve its harmonious state, something egoistic action upsets; humanity, therefore, needs to experience the flow of energy/ spirit and interdependent being, widening its boundaries, embracing relationality and selflessness (a life of self-sacrifice, its natural evolutionary state).[12] Such re-imagining may fulfill a priestly and prophetic role, conceiving of environmental balance and justice, envisioning and stimulating an ongoing (metaphoric) dialogue about/between humanity and nature (and religion, science, and secular society). New religious and scientific ecological visions may thus act as arenas of ecological dialogue; powerful, influential, efficacious symbolisms through which to re-imagine the world, being both cosmological and moral, situating humanity in nature as well as defining its role

in it, providing new organizing principles and epistemologies, fusing scientific insight and religious imagination.[13] They may thus (be used to) inform, inspire, empower, and unite new views and actions, stimulating new cultural outlooks or paradigms, and heightening awareness of ecological necessities and responsibilities, hereby (ideally) revitalizing religion, science, and society.

Notes

1. The terms 'environment' and 'nature' tend to be used interchangeably to denote the non-human world (although the latter seems to show a somewhat more all-encompassing and subjective use; other terms also used in this way are 'cosmos', 'creation', 'earth', or 'world'). Following the field of religion and ecology I also use the terms 'ecology', 'ecological', and 'ecologically' as these are seen as including humanity in the definition, implying a holistic interdependent, process of human, animal, and world (and possibly the sacred), sentient and non-sentient (rather than objectifying or externalising an 'environment' or 'nature' outside and unrelated to humanity, which is seen as part of the problem) (see Tucker and Grim 2001).

2. Szerszynski (2005) argues that the modern worldview, instead of being a disenchantment, may be an enchantment, a product of the sacral history of the West, building upon Judeo-Christianity's separation of a transcendent God from immanent nature and Protestantism's concentration on individual human action leading to secular rationality. Nevertheless, the modern worldview did in some respects challenge and disenchant the previous (dominant, Christian) worldview (which itself may have disenchanted an earlier animistic worldview) and replace it with a new one that became hegemonic. The problem, then, may be the dominance of one view over others (which may still coexist with it); thus challenging the dominant view may, in Szerszynski's terms (this volume), 'open up a space' for new visions in a diverse 'post-modern' worldview, allowing diverse constructions of reality in mutual dialogue and action.

3. Changing worldviews and 'protecting' the environment or nature, in this sense, may not be as simple as it seems. There is the danger that such changes may also treat the world as an object, similar to (but opposing) the modern worldview (e.g. 'romanticism' opposing 'rationalism'). It is argued, therefore, that what may be needed is a reconnection of humanity to nature while recognizing diversity. Thus the aim may not be to wholly overcome the modern worldview (to be hegemonic) but to channel its successes (e.g. better health, greater freedoms) in new, creative (diverse, eco-friendly) directions, which is

seen as the liberating impulses of the enlightenment grounded in earth processes (see Cronon 1996; McGrath 2003; Soule 1995; Tucker 2003).

4   By coalescing around global ethical issues such as the environmental crisis, religions may thus regain (provide) moral, cultural, political, and social (and transcendent) capital. They may engage the opportunities (or problems) created by modernity (i.e. its ethical, environmental, or social, consequences) and create innovative responses, going beyond the ideas articulated in modern discourse (including the official definition of environmentalism), providing alternative (ecological) ideas with a larger qualitative frame of reference, becoming resources for recreating private beliefs (e.g. existentially re-connecting individuals to the environment), as well as publicly addressing (e.g. ecological) issues. Such eco-religious action may thus have eschatological implications for all humanity, inspiring new attitudes and actions with respect to nature, defining and maintaining the common good, giving meaning to the environment and promising the power to overcome environmental problems (Beyer 1994; Casanova 1994; Oelschlaeger 1994; Woodhead and Heelas 2000).

5   Lynn White (1967) famously goes so far as to argue that Judeo-Christianity may have been a root cause of the ecological crisis through *imago Dei* and the command in Genesis for humans to have 'dominion' over the earth, with the latter serving man. Other authors have pointed out that Judeo-Christianity's overcoming of pagan animism (and its interdependence of humanity and nature) and anthropocentric, dualistic, hierarchical, and patriarchal, ideas may also have had such an effect as well as leading to an avoidance of environmental issues and lateness in engaging with them. It may also be that *interpretations* of biblical texts, linked with Greek sources and later secular scientific ideas, may have contributed to such views. However, such ideas have been seen to be somewhat biased and oversimplified. They may ignore the Bible's and Judeo-Christianity's views of God sustaining nature, the need to overcome sinful humanity, and other commands to *care* for life, seeing *imago Dei* as involving responsibility for creation, mirroring God's care, with humanity's role being to serve God (and creation). Interpreted differently, therefore, Judeo-Christianity may be said to have theocentric rather than merely anthropocentric views (see Callicott 1997; Deane-Drummond 2004; Kinsley 1994; Nash 1989; Oelschlaeger 1994).

6   There is a large and growing body of literature and actions in this area. For a wide-ranging overview see (Taylor and Kaplan 2005); www.religionandnature.com, as well as the *Forum on Religion and Ecology* (www.yale.edu/religionandecology).

7   Such a 'new science' that converges, discourses, and/or embraces, with religion or spiritual ideas is seen to result from developments within biology, cos-

mology, genetics, neuroscience, and physics, as well as the history/ philosophy of science, that lead to a questioning of the modern, rationalist, mechanical worldview and awareness of and involvement with ethical and religious issues (especially questions of transcendence, value, and meaning). This has led to what has been described as the 'field of science and religion' a diverse interdisciplinary dialogue, with science and religion in creative mutual consonance, co-operation, interaction, or harmonization (see Van Huyssteen 2003).

8 Religions are diverse and thus there may be no definitive Buddhist, Confucian, Daoist, Jewish, or Christian perspective on the environment. Rather there may be a (cultural, geographical, historical, social, theological) diversity of (possibly competing/contradictory) perspectives. Interpretations of religious traditions within the field of religion and ecology then are new ecological-based or inspired interpretations of Buddhism, Confucianism, Daoism, Judaism, and Christianity, made by individuals or groups concerned with environmental issues, using them as constructive sources of environmental ideas. They are new religious forms, not the whole story and have not been without challenge. The idea of unified 'religious traditions' or 'world religions', themselves, following Talal Asad (1993) and Tomoko Masuzawa (2005), may be questioned (especially when assessing Eastern forms which are quite diverse), these being seen as Western-based concepts and constructions appropriating and unifying contextual and diverse social forms. Nevertheless, it can be said that there are (diverse, dynamic) historical processes that are self-identified as Buddhist, Confucian, Daoist, Jewish, or Christian, and which transmit narratives and written records of interactions between human communities and local ecosystems which are distinct from one another and from secular approaches and which can be explored. Furthermore, as religions are diverse and dynamic, not monolithic and static, new interpretations and forms have always occurred (although not always recognized or legitimated) and thus those expressed in the field of religion and ecology may be accepted and become influential.

9 Deep Ecology is traced to philosopher Arne Naess (plus Bill Devall and George Sessions). Other influences include eco-centric (Eastern) religions, Christian thinkers (e.g. St Francis of Assisi); 'primal' (tribal) peoples; the philosophers Heidegger and Spinoza; the romantic movement and literary tradition of naturalism; the eco-centrism and social criticism of Aldous Huxley, Henry David Thoreau, John Muir, D.H. Lawrence, and Robinson Jeffers; and the 'ecological perspective' of ecologists and conservationists, such as Aldo Leopold, Rachel Carson and Dave Brower. Leopold especially is seen as influential, his 'Land Ethic' stressing the web-like interrelated complexity of the earth and urging humanity to 'think like a mountain'. The Gaia hypothesis is traced to scientist James Lovelock (plus microbiologist Lyn Margulis).

Historical antecedents to it are seen in the philosophies of Hegel, Spinoza, and Whitehead, Herbert Spencer and Aldo Leopold, all of whom spoke of nature in terms of an organism, Russian scientist Vernadsky, who viewed the biogeochemistry of the earth as a unity, and scientist James Hutton who saw the earth as a 'super-organism'. Gaia ideas are also seen to be 'resonant' with 'primal' peoples, animism, Buddhism, paganism, shamanism, and totemism, as well elements of Theosophy.

10 This is an inevitably selective group, dependent on space and chosen for contrast and comparison. Other religious traditions, such as Baha'i, Hinduism, indigenous traditions, Islam, Jainism, Shinto, Sikhism, or Zoroastrianism, could be explored in this way, of course, (and are) as could a scientific concept such as the 'Epic of Evolution' (see Callicott 1997; Gottlieb 1996; Kinsley 1994; Watling 2008b).

11 Chinese terminology involves two systems, the 'Pinyin' (e.g. *Dao*, Daoism, *qi*) and 'Wade-Giles' (e.g. *Tao*, Taoism, *ch'i*), used by different Daoist and Confucian scholars. For clarity I use the former.

12 Bassett et al. (2000, 78) see 'Points of Religious Agreement in Environmental Ethics': the natural world has value in itself and does not exist solely to serve human needs; there is a significant continuity of being between human and non-human living beings (which can be experienced), even though humans have a distinctive role; non-human living beings are morally significant, in the eyes of God and/or in the cosmic order; the dependence of human life on the natural world can and should be acknowledged in ritual; moral norms (justice, compassion, reciprocity), apply both to human and non-human beings; the well-being of human and non-human beings are connected; there are legitimate and illegitimate uses of nature; greed and destructiveness are condemned, restraint and protection are commended; human beings should live in harmony with nature (via their traditions). Similarly, Kinsley (1994, 227-232) suggests common recurrent religion and ecology themes: reality being viewed as organic; an emphasis on knowledge of and rapport with the land; a stress on human kinship with nature; mutuality and reciprocity as the appropriate framework for relating to nature; the embeddedness of humanity within nature; existence envisioned as a unity; a stress on an underlying moral or ethical unity; the need for human restraint in dealing with nature; a criticism of the prevailing worldview; a recognition that ecological concerns have religious meanings.

13 Questions, of course, may be raised concerning such religio-scientific ecological ideals and activities. For example, there is the challenge of comparing or reconciling different religious or scientific beliefs, theories, or traditions, or differences within them over the authority to use traditions or create new

visions. Secondly, there is the question of whether it is inevitably an academic, liberal initiative, with overarching ecumenical concerns, based on dualist Western assumptions (of an objective 'nature' needing protection, or of a singular 'religion' or 'science'), this overriding non-Western assumptions, imposing a universal eco-ethic on them (and possibly simplifying religious or scientific concepts and traditions, ignoring diversity or depriving them of deeper meaning or relevance). Counter-arguments to such points are that neither religion nor science is static; they always adapt and change, which means they are open to re-interpretation (as are concepts of nature) and adherents themselves interpret them in different, complex or simple, ways, dependent on context. Furthermore, any ecumenical commonalities or practices with respect to ecology may be seen as legitimate new forms of religion or science. It may be, then, that such ideas and activities may need to be viewed as a process, a variety of beliefs, dialogues, and movements, in mutual communication, posing possible future directions (see Tucker 2003; Tucker and Grim 2001). In this sense, then, I stress these visions as 'arenas' and 'dialogues' to emphasize that they are dynamic, evolving visions, collages constantly being reinterpreted. They may be challenged (particularly the religious-based visions) and (in the science-inspired visions) the people and theories within them may not always explicitly identify or be identified as active 'members' of them. Nevertheless, they may be linked to, referenced, or interpreted and used, encouraging, influencing, and stimulating, new thought and action, within an ever-evolving (co-ordinated, diverse, expanding) discourse.

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5 Religion, Nature, and Modernization in China

James Miller

One of most important concepts in the Weberian theory of modernity is summed up in the German term *Entzauberung,* usually translated into English as 'disenchantment' or 'rationalization'. A concise summary of this concept can be found in an essay published in 1987 by the British sociologist Ernest Gellner. He writes:

> The modern world is organized in a rational way. This means that clearly specified goals are pursued by a calculated allocation of means; the means include not only tools but also human activity and men themselves. These things are treated instrumentally and not as ends in themselves. Effectiveness and evidence are kings. The procedures are also rational in the sense of being orderly and rule-bound: like cases are treated alike. (Gellner 1987, 153)

According to this view, therefore, modernity presupposes a rational, logical and orderly view of the world, one that is best managed by rational procedures and gives rise to the legalistic, bureaucratic institutions of the modern state. Rationalization, moreover, is not something that 'happens' to society. It also has consequences for the way that moderns view and engage the natural world. Gellner continues:

> It is not only the procedures of organizations which are in this sense 'bureaucratised'; the same also happens to our vision of nature, of the external world. Its comprehensibility and manipulability are purchased by means of subsuming its events under orderly, symmetrical, precisely articulated generalisations and explanatory models. *This* is Disenchant-

ment: the Faustian purchase of cognitive, technological and adminis-
trative power, by the surrender of our previous meaningful, humanly
suffused, humanly responsive, if often also menacing or capricious
world. *That* is abandoned in favour of a more a more predictable, more
amenable, but coldly indifferent and uncosy world. (Gellner 1987, 153)

As Gellner's explanation makes clear, the Weberian concept of *Entzau-
berung* has at least two aspects to it, evident in the two English terms that
are commonly used to translate it, rationalization and disenchantment.
On the one hand, *Entzauberung* involves a belief in the possibility of the
rational ordering of the world; on the other hand this belief is predicated
on an instrumental view of nature, one in which nature is not valued as
an end in itself, but becomes a means for the attainment of rationally cal-
culated ends. *Entzauberung* is thus more than a process that takes place
within the ordering of society. Rather it also 'happens to our vision of na-
ture' conceived as the world that is 'external' to the self. Thus, according
to this theory, the rationalization and bureaucratization of society that we
are familiar with in the modern period, is also accompanied by the secu-
larization of space and the disenchantment of nature.

Recently, however, this understanding of disenchantment has begun
to be questioned by social theorists. In particular, Bronislaw Szerszynski
(2005) has argued that the reordering of society and nature in modernity
should not be viewed as a final stage in the process of disenchantment and
secularization, but rather as a moment within the ongoing transforma-
tion of the sacred throughout history. This transformation is not so much
a gradual process of the sacred's absenting itself from society and from
nature, but rather a continuous reordering of the sacred within the world.
The view of modern society as the highest stage in some gradual evolution
towards rationality and secularism is a view from a particular evolution-
ary perspective, one that has been informed by centuries of Western theo-
logical history, or as Szerszynski terms it, 'the long arc of monotheism'. As
Szerszynski writes:

> The illusion that the sacred has disappeared is arguably a feature of all
> historical transitions from one form of the sacred to the next in a given
> society. Each transition can seem like an eclipse of the sacred in the
> terms in which it was organized in the closing epoch; from a larger his-
> torical perspective, however, it can be seen as the emergence of a new
> sacral ordering. (Szerszysnski 2005, 26)

The secularization of society and the disenchantment of nature summed up in the concept of 'absolute profane' are thus not to be seen as a final stage in history but as 'an event *within* the ongoing history of the sacred in the West' (2005, 27).

This paper aims to consider the disenchantment of nature in modern China from the perspective of this debate within social science theory. First it examines the process of modernization in China as a self-conscious process of disenchantment and rationalization. In this process the state assumed rational control over religious spaces and religious organizations. It was able to do so in part through the development of the concept of 'superstition' in which the religious activities associated most overtly with nature were prohibited. All this seems to indicate the value of the Weberian view of modernization. This chapter follows Szerszynski, however, in arguing that this process should not be understood as the absolute secularization of Chinese society but rather as the creation of a new form of the sacred in Chinese society, this time the creation of a transcendent monotheism focused on the abstract concept of the state and concretely embodied in the Communist Party. In effect, therefore, the process of modernization in China has not been about secularization but rather about the establishment of a new sacred order in which the diversity of Chinese religious values became increasingly subordinated to a new transcendent monotheism.

The Rationalization of Sacred Space

In an article entitled 'Knowledge and Power in the Discourse of Modernity: The Campaigns against Popular Religion in Early Twentieth-Century China' Prasenjit Duara (1991) argued that the newly emerging modern Chinese state in part based its ascendancy on its ability to destroy the local religious associations and local geographies of power so as to reorganize them within a monolithic ideology of the modern nation state. Even before the establishment of the People's Republic of China in 1949, the modernization of the Chinese state was achieved through a reorganization of local power and social networks, chiefly by appropriating land owned by local temples. 'Monks and priests who had depended on religious properties were deprived of their sources of livelihood; local religious societies that fulfilled social as much as spiritual needs were dispossessed and replaced by government offices that seemed mainly interested in extracting revenues and uncovering unregistered property' (Duara 1991, 76). Duara

viewed this reordering of local religion as socio-economic activity, with the state assuming control over the economic resources and social structures previously under the control of the religious organizations. But perhaps this was not simply a reordering of the religious economy, but also a reordering of the sacred. Perhaps in crushing the social and economic power of the local temple networks, the modern Chinese state was also establishing itself as the only legitimate source of spiritual authority within the nation. In short, this transformation might not be about secularization, as Weberian theory understands it, but, in Szerszynski's terms, as one of these various moments in human history when an old sacred order gives way to a new one.

In order to understand how this forced disenchantment of China's countryside could legitimately be viewed as a transformation within the sacred in modern China, it is necessary to understand the relationship between the sacred, nature and geography in traditional China. In the history of China, power was not only constituted ideologically and theologically, but geographically too. This was evident most clearly in the sacred cosmography that held China to be the 'middle kingdom'. This term originated in the Warring States period, and was originally understood in the plural. It referred to the various 'central states' that shared the culture of writing in characters. These 'central states' were thus distinguished from outer regions who did not share the same literary and cultural traditions. After unification under the first Qin emperor, these 'central states' became the 'middle kingdom', that is, the single China that is familiar to us today. At the centre of this middle kingdom was the capital, and at the centre of the capital was the imperial palace, and at the centre of the imperial palace was the court from which the emperor governed the distant corners of the empire. This cosmology was replicated everywhere. The magistrate had his offices in a courtyard at the centre of the city. The city was surrounded by walls. Outside the walls was the countryside that provided the food to keep the city functioning and beyond the countryside was the wilderness inhabited by bandits, beasts, and barbarians. This cosmology was replicated also in the heavens, which were viewed as a circular canopy rotating around a central ridge-pole known as the Great Ultimate (*taiji*), an *axis mundi* connecting the pole star down through the earth into the underworld. In some Daoist religious movements, the most significant deities were thus the ones associated with the stars of the Big Dipper (*Ursa Major*) who lit the way to the apex of heaven and around which the lesser constellations revolved. Power, in earth and on heaven, was manifested in the construction of space. It was about the

disposition of things, structuring human relations in a certain way within their surroundings so as to promote a cosmic vision of order and harmony (see Lewis 2006).

Central to this worldview was the network of sacred mountains that symbolized the centre and the four corners of the empire. In addition, both Buddhists and Daoists claimed their own sacred mountains and established monasteries and retreat houses there. At certain times and in certain locations these sacred geographies overlapped with each other. Mt. Tai in Shandong province, the Eastern mountain of the imperial cult was also sacred to both Buddhists and Daoists. On this mountain, the Qin emperor who reunited the country following the dissolution of the Warring States period instituted new sacrifices to the supreme cosmic rulers. Only the emperor was permitted to offer these *feng* and *shan* sacrifices. Through this exclusive ritual the emperor asserted his own personal connection to the cosmic powers that governed heaven and earth. He established himself not only as the chief mediator between the gods and the people but as an indispensable element in the theological geography that constituted the Chinese understanding of their place in the universe. The Wu emperor of the Han dynasty reinstated these sacrifices and built a temple at the base of the mountain where the entire cosmic pantheon could assemble to witness the rituals over which the emperor personally presided (see Bokenkamp 1996). The imperial cult thus served to reinforce the authority of the emperor over his people, an authority vested in the ritual construction of sacred space by means of which the nation could orient itself in relation to the heavens above and the peripheral spaces to the north, south, east and west.

This network of sacred spaces, however, should not solely be interpreted in ideological and epistemological terms about what Chinese people *believed* about the nature of the cosmos. Rather we should interpret this construction of sacred space as the way in which power and authority were actually constituted in terms of the geography of the nation. The significance of the *feng* and *shan* sacrifices did not lie solely in the symbolic nature of the liturgy and the ritual, but in the fact that they were performed at the base of a vast and imposing mountain reaching vertiginously up into the sky. Through the ritual the emperor was appropriating power vested in the physical geography of that particular space.

The technological limits of the pre-modern era, however, meant that the official state orthodoxy was not imposed uniformly throughout China. China was thus a land of religious diversity in which local religions constructed their own interpretations of sacred space and competed with

each other for the allegiance of the people. Dynasties were established on the back of religious fervour and were destroyed in the same way. As much as the Imperial court sought to impose its vision of unity and harmony on the empire, such an imposition was inevitably imperfect, fracturing at its various intersections with the authority of local cults and popular religions. In order for this vision to become a reality, it was necessary for the modern state to dismantle the networks of theological power and religious authority traditionally associated with the sacred mountains and local cults. This was made possible part by rapid developments in communications technology that, for the first time, enabled the central authorities to impose their vision of the world upon the various regions of China. Although from the perspective of traditional Chinese religious history this could be viewed as the secularization of these natural and local spaces, the campaigns against popular religion could equally be interpreted as the reordering of the sacred into a single, overarching, transcendent monotheism constructed around the abstract notion of the state.

It would come as no surprise, therefore, that religion and the state would come into conflict where the function of religion was not clearly allied with that of the state. In such cases religion had to be controlled by the state because it was, in effect, a theological competitor. Duara traced the modern history of conflict between religion and the state to an official document published in 1928, called the 'Standards for Preserving and Abandoning Gods and Shrines' (Duara 1991, 79). This document marked a milestone in the process of legitimating certain forms of religion and delegitimizing others. Some gods such as Confucius, Guandi, Laozi, and Buddha were permitted to be worshipped. Other gods, such as the city god and the god of wealth were proscribed. The main distinction to be drawn between these two lists of gods is that the former could be identified in terms of their function with the overarching goals of a nation state, whereas the latter list contains gods who chiefly serve the interests of individuals or localities. In short, some gods had a place within the temple of nationalism and other gods were seen as subversive of the overarching agenda of the state. Just as the rise of the nation state in Europe has been seen as a theological consequence of the Protestant Reformation (Loy 2002, 94), so also the invention of the modern Chinese nation state could be seen a type of theological activity that demanded the restraint of religious competitors.

Religion, Nature, and Modernization

The debate about the place of religion in the modern Chinese state was not, however, understood simply within the framework of the overarching theology of the nation state. It was also an ideological conflict predicated on competing visions of nature. This conflict was made possible by the invention of the category of 'superstition' (*mixin*). Duara demonstrates in the same article that although popular cults and local religions had previously been regarded with disdain by elite religious leaders and categorized as 'heterodox' (*xie*) they were now increasingly placed under the new category of superstition (*mixin*). The category of 'superstition' thus functioned as an ideological tool by means of which the state was able to make normative judgments about religious institutions so as to assert power over them. It did so by framing the ideology of local and popular religious movements as 'superstition', that is to say, 'deluded beliefs'. A deviant or unorthodox institution might have the possibility of being aligned, reformed or normalized in some way. An organization founded on superstition, or deluded belief, would face a far harder task of surviving in the modern state. Just as the birth of the nation state in Western Europe and North America was accompanied by the proscription of witchcraft and magic, so also the birth of the modern Chinese state witnessed a violent struggle over the ideologically correct way to view and engage the natural world. In both cases, magic and superstition were seen as the direct enemies of technology and science.

The attempt to define superstition in China began in 1930 with the 'Procedure for the Abolition of Occupations of Divination, Astrology, Physiognomy and Palmistry, Sorcery and Geomancy,' the 'Procedures for Banning and Managing Superstitious Objects and Professions,' and the 'Prohibition of Divinatory Medicines' (Duara 1991, 80). The so-called superstitions of divination, astrology, physiognomy, palmistry, and geomancy were all key elements of popular religion in China, frequently conducted in local temples, and were not generally associated with the foreign religions of Buddhism or Christianity. In effect the proscription of these activities was designed to promote the demise of traditional Chinese popular religion. But there was also a significant ideological component at stake here that revolved around the philosophy of nature. Although astrology and physiognomy are generally dismissed in modern society as 'fortune-telling', in traditional Chinese religion they were part and parcel of the fabric of religious meaning that enabled people to make sense out of their lives, and also part of the local temple economy. What binds all

these forms of 'fortune-telling' together, however, is a shared philosophy of nature, one that is diametrically opposed to the ideology of science and rationality on which the modern Chinese state was building its authority. All the proscribed activities described as 'superstitious' held in common the view that physical nature, whether in the form of human bodies, the stars or geography, had the capacity to reveal truths that are of value for human beings. As such they were sources of religious meaning and moral capacity that originated beyond the control and authority of the state, or, indeed, any formal religious institution. The development of science, on the other hand, was accompanied by an instrumental rationality that viewed nature not as the revealer of spiritual truths but as neutral, value-free space capable of being shaped by human will through technology and so forth. In the former case, nature revealed truths to humans through religious processes; in the latter case, humans imposed their values on nature through technological and economic processes. In the modern nation state the imposition of values on nature is directed by the organs of the state through its various science and technology research institutes and the modern university system.

The attack on superstition persisted in modern China through to the Communist period. At the Eleventh Party Congress in 1979, freedom of religion was restored in China only for the five state-sanctioned religions of China. All other forms of traditional religious culture were deemed superstition. The policy on the regulation of religions adopted in 1979 states that:

> By superstition we generally mean activities conducted by shamans, and sorcerers, such as magic medicine, magic water, divination, fortune telling, avoiding disasters, praying for rain, praying for pregnancy, exorcising demons, telling fortunes by physiognomy, locating house or tomb sites by geomancy and so forth. They are all absurd and ridiculous. Anyone possessing rudimentary knowledge will not believe in them. (Document 3 from *Selected Documents of the Third Plenary Session of the Eleventh Party Congress, 1979*; MacInnis 1989, 33-4)

From this excerpt we can see that the principal question about the relationship between religion and the state has been formulated around the capacity of nature to shape and direct people's religious experiences. The so-called superstitious activities mediate the relationship between humans and nature in a way that lies outside of the bureaucratic processes of the state, or the established religions with solid institutional structures

that could more easily be brought into line with the goals of the modern Chinese state.

Thus the conflict between religion, science and superstition was not just about epistemology, or the rational procedures for verifying belief. They were also about the capacity of nature to be a source of sacred power and even moral authority outside of the structures of the state and the rational procedures of science. The campaigns against superstition and local religions that were begun in the Republican period and carried through most forcefully in the Communist period were not only contesting ideological and epistemological space within the Chinese psyche; nor were they solely struggles to assert central power over local areas; rather they were also struggles over the value of nature, and the capacity of nature to function in some way as sacred space, as a source of divine revelation, or as a theological reality.

It would be a mistake to underestimate the serious nature of this conflict between science and 'fortune-telling'. The various activities proscribed under the rubric of 'superstition' were by no means fringe activities restricted to a few uneducated people. Rather, they expressed a fundamental aspect of the traditional Chinese worldview, namely the view of nature as a source of sacred power. This view is neatly summed up in a third-century poem by Cao Zhi. The subject is Mt. Tai, the sacred mountain of the east, mentioned above as the location of the *feng* and *shan* sacrifices.

> I roamed the mountain in the dawn
> Secluded in its misty depths
> When suddenly I met two boys
> With faces that were fair and fresh.
> They gave me herbs of the immortals
> The Numinous Supreme had made,
> Medicaments that when absorbed
> Revive the seminal essence and brain,
> So life, like a rock's or metal ore's,
> Passes through eons, but does not age.
> (Trans. Elvin 2004, xxii-xxiii)

Here nature, in the form of Mt. Tai, is the space in which the poet encounters two boys. They are described as having 'fair and fresh' faces, which is the clue that they are not ordinary mortals but immortal beings. This view is confirmed when they give the author 'herbs of the immortals' to 'revive the seminal essence and brain'. Here, nature is not simply the location for

an encounter with divine beings, but is also the source of cosmic power which has the capacity of conferring immortality on the one who ingests the herbs. Finally, nature in the form of unchanging rock is a metaphor for the sacred ideal of immortality. In these three cases, nature is not valued in terms of some rational economic calculus but as the medium through which the adept can transcend the mundane world. Nature is sacred inasmuch as it is the Way to attain a transfigured and more perfect reality. When the state proscribed 'divination' and 'magic medicine' it was in effect proscribing this view of nature, which formed the bedrock of traditional religious culture.

Remarkably, however, this view of nature was never extirpated from the Chinese mentality; instead it continued, albeit in a transformed way, into the modern period. Despite the ideological rhetoric of the modern Chinese state, the view that nature is a source of sacred power and moral authority continues into the present day. Take for instance, the following song from the Great Leap Forward in the 1950s:

> Let's attack here!
> Drive away the mountain gods,
> Break down the stone walls
> To bring out those 200 million tons of coal.
> (Zhang Zhimin, *Personalities in the Commune*; quoted in Shapiro 2001, vii)

At first glance it would seem that this song supports the Weberian hypothesis that modernization involves the disenchantment of sacred space. Here modernization, in the form of coal mining, demands the secularization of the mountain space where the mining takes place, described as 'driving away the mountain gods'. From the perspective of traditional Chinese religion this indeed is tantamount to the secularization of sacred space, but from a larger perspective it is more accurate to interpret this as the reordering of the sacred. Driving away the mountain gods does not reveal the mountain to be an inert place devoid of any sacred power. Rather it reveals the mountain to be harbouring a new form of sacred power, that of coal. Coal is not here simple 'stuff', but during the Great Leap Forward was the means by which China would achieve its Great Leap Forward into the future. It was, in effect, the numinous substance that was essential in the concoction of a new elixir of immortality: steel. The view of nature as harbouring secret powers, whether conceived as 200 million tons of coal, or herbs with numinous powers remains constant. The only thing that

changed from the time of Cao Zhi to the time of Mao was the understanding of the role of the traditional gods as guardians or mediators of the sacred power of nature. These were dispensed with and replaced by the gods of the human will. As Jasper Becker writes in *China's Hungry Ghosts* (1996, 308; quoted by Shapiro 2001, 68):

> Mao wanted to modernize China but could not grasp the basis of modern thought, the scientific method: that the way in which the natural universe behaves can be proved or disproved by objective tests, independent of ideology or individual will.

Becker's critique of Mao, and also Shapiro's, was that Mao did not in fact secularize nature in the 'correct' way. Rather he simply replaced one form of ideology with another, asserting the supremacy of the human spirit, not the celestial gods, over nature.

Reading Chinese modernization not as 'secularization' but as an enduring theological contest over the location and power of the sacred might also help explain contemporary Chinese leaders' fascination with grand works of environmental engineering. Projects such as the Three Gorges Dam can be understood as modern equivalents of the acts of mythological heroes who brought order out of the watery chaos. Such projects continue to reveal the enduring power of sacred mythology in modern China. Thus the destruction of the natural environment continues not through the rationalization and disenchantment of nature, as conservative religious critics of modernity might suggest, but because of the enduring power of 'secular theologies' to subordinate human interests to irrational ideals (see Gray 2004).

Religion and Nature in Contemporary China: Three Cases

The debate over the place of religion and nature in modernity was not, therefore, decisively settled in the twentieth century and has begun to take on new forms in an era of relative religious freedom in China. The following three brief case studies display something of the complex situation of religion, nature and modernity in contemporary China.

The first case concerns that of religious sites located in areas of outstanding natural beauty, which have been developed and reorganized chiefly as tourist attractions in China, and function under the authority of local tourism offices. Although the reopening of temples might lead one

to think that religion is somehow resurgent in China, the fact that religious spaces are often contained firmly within tourist economic development zones makes clear that the sacred is secondary to the economic. The recent flourishing of religious activities in China thus leads, paradoxically, to serious problems faced by wealthy monasteries located in tourist development zones. Referring to Buddhism, Jing Yin (2006, 90) writes:

> Problems associated with the impact of the market economy on Buddhism can be divided into two categories. The first can broadly be termed external problems that arise when government officials, particularly low ranking local ones, infringe upon the rights and interests of the monasteries. The more wealthy monasteries become the more frequently this occurs, and this constitutes a rather serious problem in some areas. The second category of problems are internal disputes that arise when the state returns property to the monasteries following the implementation of the policy of religious freedom in 1979.

The recent freedoms bestowed on religious institutions in China have thus come at a price, that of keeping sacred space contained within the bureaucratic control of the state as a means to achieving rational economic ends. Jing Yin (2006, 91-92) goes on:

> From a Buddhist perspective, one can say that the one-sided economic development in many monasteries has made them lose their distinctively Buddhist characteristics. I have accompanied many overseas Buddhist delegates on visits to monasteries in China. In my experience, visitors often feel that despite the proliferation of monasteries, there is a lack of character here. Monasteries commonly operate vegetarian restaurants, guest houses, souvenir shops, and food and drink booths. Some even go to the extreme of running factories and operating companies. The long-term effect is that the market economy is seriously hurting the religious nature of the monasteries. Once monasteries become large-scale enterprises, it is difficult for them to back out. And when monasteries become principally tourist attractions, the danger is that the energy of the monks becomes devoted chiefly to receiving tourists, leaving no time for the *sangha* or to engage in Buddhist practice.

In other words, even in an era of religious freedom, it seems that religious activities continue to be subordinated to rational, economic functions and are increasingly unable to stand as moral or ethical challenges to the

dominant values of the state. Such a view is borne out by the Chinese state regulations on religion issued in 2004, which paint a clear picture of the place of religion within the secular space of the Chinese state. These new regulations do not deal with the thorny theoretical questions such as the definition of religion, or the relationship between religion, superstition and scientific belief. Rather they tend to focus on more bureaucratic questions such as which government agency is the competent authority for dealing with various types of religious issues, and economic questions such as the relationship between religious pilgrimage and secular tourism. Article 18 of the new regulations, for example, governs the management of religious sites and typifies well the new direction in Communist policy towards religion:

> A site for religious activities shall strengthen internal management, and, in accordance with the provisions of the relevant laws, regulations and rules, establish and improve the management systems for personnel, finance, accounting, security, fire control, cultural relics protection, sanitation and epidemic prevention, etc., and accept the guidance, supervision and inspection by the relevant departments of the local people's government. (State Council 2004)

As this regulation indicates, the overall goal now is to promote the smooth management of religious spaces in such a way that they do not disrupt social harmony or pose a threat to the authority of the government. It seems that party officials are no longer concerned with understanding the nature of religion in terms of political theory, but only with managing its social and economic functioning. In contrast to the divisive ideological debates of the May Fourth and early Communist era over secularization, tradition, and modernity, the contemporary framework for understanding the relationship between religion and society emphasizes economics, management and social harmony. The CCP no longer seems intent on attempting to control the religious beliefs of Chinese citizens, but rather on ensuring that religious organizations, whatever they believe, work to support the nation and its economy

The second case study concerns the revival of interest, at least in a theoretical sense, of the value of traditional religions in contributing to the emergence of environmentalism in contemporary China. Most notable in this regard has been the work of Pan Yue, Vice-Minister of the State Environmental Protection Administration (SEPA). In a notable speech in 2003, he called for the creation of an 'environmental culture and national

renaissance' that forged traditional views of nature with the demands of the modern Chinese state into a nationalistic vision of Chinese development, and one that would avoid the ecologically destructive excesses of Western modernization. He quoted chapter 16 of the Daoist classic, *The Way and Its Power* (*Daode jing*), 'The myriad creatures all rise together / And I watch their return / The teeming creatures / All return to their separate roots' to argue for a 'circular economy,' his vision of an ecologically sustainable society (Pan 2007, 11). Such a society would be at once at the forefront of ecological economics and sustainable development theory, and at the same time indigenously and authentically Chinese:

> The pursuit of harmonious relations between man and nature is the mainstream of traditional cultures in the past thousands of years. The Confucian school advocated 'the unity of nature and man', which emphasizes that all human behaviours must conform to the law of nature.
>
> …
>
> The Daoist school proposed the theory of 'Tao following nature', which elevates the concept of 'nature' to a metaphysical height. … According to Laozi, natural laws shall not be violated, and human principles must conform to the natural laws. (Pan 2007, 6-7)

In Pan's view, therefore, China's religious traditions are sources of moral capacity and intellectual authority which could be reconfigured to fit in with China's new goals of sustainable development. China's economic development, its accompanying environmental and social pressures, and its state-sponsored nationalism are thus ushering in new transformations of the sacred.

Finally, the contemporary Chinese scene reveals a popular interest in understanding the relationships between religion, science and nature. Such an interest has most recently been evident in the 2005 debate about whether environmental protection in China was best served by an attitude of reverence (*jingwei*) towards nature. He Zuoxiu, a prominent scientist, argued that reverence for nature was the product of anti-scientific thinking and was not helpful in fighting diseases or natural disasters (He 2005). Liang Congjie, the founder of the Chinese NGO Friends of Nature, on the other hand, argued that nature cannot be viewed simply as a tool, and that having a sense of reverence for the natural world was itself natural and rational (Liang 2006). Although Liang was careful to define his use of the word 'reverence' in a humanistic way, the very use of the term 'reverence'

or 'awe' (*jingwei*) in the first place, clearly struck a negative chord with some members of the scientific establishment. The very debate reveals that issues of the environment are not simply a matter of science and technology in China, but also ethics and values.

These three examples from the contemporary Chinese scene reveal that in China's quest for modernization, religion and nature continue to be sites of ideological conflict. Religious organizations continue to be actively managed by the state's religious affairs administration. This oversight is especially strong where religious sites are located in areas of natural beauty and there is thus a large potential for making money by developing the local tourist economy. On the other hand, there seems to be a willingness among some of the elite to consider the value of traditional ideas in helping to solve China's dire environmental problems. Their views are regarded as controversial because they seem to contradict the official ideology of modernization and scientific development (*kexue fazhan*) and yet figures like Pan Yue hold senior positions within the government. At the same time the question of respect for nature remains highly contested among scientists and environmentalists. All this seems to suggest that despite the rhetoric of science and modernity, there has not been an irreversible process of disenchantment in China. Some traditional values persist, whereas others have been transmuted into nationalism and scientism. The relationship between science, nature, and religion continues to be contested both theoretically and practically.

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6   In Search of an Adequate Christian Anthropology

Francis Kadaplackal

Introduction

We currently live in challenging times. The role of the human being should be placed under scrutiny due to the rising tide of progress and development, scientific discoveries, technological innovations, and the reality of ecological catastrophe. Our unquenchable thirst for profit and for making our life more comfortable, cosy, and easy, has a direct relation to the degradation of the natural environment (McDonagh 1986, 8-9; Wirzba 2003, 62). The Judeo-Christian tradition has been accused of perpetrating an inhuman, careless, environmentally unfriendly, and even destructive attitude towards nature and the natural environment. In this essay, I intend to enter into a theological investigation regarding the place and task of human beings in creation. First, Christianity's theology of creation seems to propose a strongly anthropocentric worldview, as a result of the extreme personalistic character of the operational theological categories, which can be considered as theologically insufficient, one-sided, and inadequate. Second, we can identify *imago Dei*, which is considered to be the backbone of the prevailing theological anthropology, as theologically insufficient, too broad and too exclusivist, because it does not really provide enough grounds to care for the whole creation. Third, this means that we need to plunge into a reinterpretation of *imago Dei* in order to suggest a compatible theological anthropology, which can help us to value the creation as a whole. Only an adequate theo-anthropology can maintain the equilibrium between the unique role of human beings in creation (in their relationships with God, other human beings, and nature) and the care for nature as God's creation. Based on these hypotheses, I will take a

two-fold step to reinterpret the human beings in creation. In the first part, I will expound upon the theological nature of the problem. Here, I will also dwell on the limitations of *'mago Dei* because of which I argue that it cannot function properly in theological anthropology. In the second part I will present the 'created co-creator' as a better theo-anthropological category. I shall conclude my theological reflection by comparing both these categories to prove why I opt for the 'created co-creator'.

The Theological Nature of the Problem

Christian theology finds its basis in the fundamental tenets of our faith that were formulated already in the earlier centuries of Christianity, especially in the Creed. The Niceno-Constantinopolitan Creed (381) sets out the basis of our belief in a God who is described as *'…Deum, Patrem omnipotentem, factorem caeli et terrae, visibilium omnium et invisibilium'* (Denzinger and Schönmetzer 1963, 67). Whenever Christians use the word *'credo'*, it is pregnant with the full meaning of the belief in a God who is Almighty and who causes the whole world into 'being'. As Houtepen says: 'Het geloof in de scheppende God wil juist fundamenten leggen onder alle religieuze en esthetische ervaring en richting geven aan ons gedrag' ['Faith in the God of Creation aims to give good foundations for all our religious and aesthetic experience and guide our behaviour'] (Houtepen 1990, 59). It is therefore our task to understand rightly and to interpret our traditions properly in order to discover our place in creation.

Many scientists and philosophers have charged the Judeo-Christian creation theology as guilty of perpetrating a dreadful exploitation of nature. So, for example, Lynn White published an article in 1967, 'The Historical Roots of Our Ecological Crisis,' which was a great attack on Christianity's way of treating nature and nonhuman beings. White was of the opinion that the crisis can be traced back to the way Christianity taught its believers about the creation of the world (White 1994, 9-14). 'By destroying pagan animism', says White, 'Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects. … Man's effective monopoly on spirit in this world was confirmed, and the old inhibitions to the exploitation of nature crumbled' (White 1994, 12). Scholars like Douglas John Hall and René Coste do recognize that there is a problem, a grave ecological crisis, which is 'the distorted relationship between human and nonhuman nature' (Hall 1986, 5-13; Coste 1994, 42-47; Moltmann 2001, 172; Oelschlaeger 1994, 19-26; Ratzinger 1995, 33-39).

While recognizing the crisis and a certain culpability, Hall goes on to ask if we have been good and faithful stewards of the earth (Hall 1986, 24; Hall 1990, 188-191; Cobb 1972, 34-36). It is not enough that we look at the technologists and scientists with indignation, but we must evaluate the whole lot of our beliefs and actions and we should 'begin in the spirit of self-examination and *metanoia*'. (Hall 1986, 24; Grenz 1994, 168; McEvoy 2001, 196). In my opinion, we must clarify, reinterpret and redefine the operational theo-anthropology that regulates our relationship with each other, God, nature, and nonhuman beings.

Imago Dei

Imago Dei is a theologically loaded term that expresses the relationship between God and human beings. From the early history of humankind, this has adopted a technical, *theo-anthropological* connotation in the confession of faith within the church (Hall 1986, 61; Langemeyer 2000, 369-371; McGrath 2000, 379-382). Humanity becomes the point of attention based on the *Wirkungsgeschichte* in the book of Genesis, 1: 1-2:4, since the image of God is imprinted on us as human beings. The concepts 'stewardship' and 'dominion' were used and interchanged in an effort to specify the role of the human being. It is the staunch wish of God to raise the place of humans above all creation and to give him control and power over all creation. The Judeo-Christian tradition argues that humans receive the most prominent place in creation and the human assignment in nature is to 'dominate' and 'control' the creation by being a 'master and ruler' just like God is a master for him. This 'dominion thesis' is often seen to be the fundamental cause of the ecological crises in the world. This ethical imperative for upholding 'dominion and stewardship' is strongly coloured by deep anthropocentric convictions, inspired by the Judeo-Christian faith traditions and encourages the exploitation of nature.

As *imago Dei*, humans have a unique and privileged place within creation, with special authority that also brings along due responsibility. This implies that creation as a whole can be a promise as well as a threat, since 'human beings are the most vulnerable aspect of creation, the linchpin of success and failure' (Fern 2002, 167). According to Joseph Ratzinger, the human being is the venue where heaven and earth meet each other. As the image of God, 'in the human being God enters into his creation; the human being is directly related to God. The human being is called by him' (Ratzinger 1995, 45). Being confronted with the enigma of the 'human

condition', argues Grenz, we end up in an identity problem. But we must realize that 'our foundational identity rises from the fact that our ultimate origin lies in God' (Grenz 1994, 166).

The theological world reckons *imago Dei* as the 'backbone of theological anthropology', as that which is foundational in determining humanity's relationship with God, each other, and nature. Furthermore, it is considered as the qualifier, determinant, and regulator of how we should discover our place in the world. It is precisely this that I want to bring into question. I am of the opinion that this cannot be accepted as the only theological standard to regulate, to assess, and to make sense of our role in creation, unless it has been subjected to theological reflection, moral analysis, and evaluation. Can it render us with the possibilities to cope with the challenging situations that we face today? Does it provide us with a framework to bring together theology and anthropology (and ecology) for shaping a coherent vision about the role of the human being?

Theological Limitations of Imago Dei

In my opinion, *imago Dei* does not provide us with an adequate anthropology. First, as God's images, our origin lies in a God who creates human life, the whole world and everything in it. This belief forms the very foundation of our existence. But in my opinion, *imago Dei* overemphasizes the dignity of human beings. It is here that I would like to make my first theological argument. Our 'being in the world' is not just a presence, but it should be a theologically qualified presence, that reflects and radiates the dignity that we have received from Him in love. In this way, dignity is not only an ontological category, but also a call and a vocation at the same time. An overemphasis of the concept can endanger the theological ideas behind it, that is, that we have our origin in God. Taking part in the dignity of God should not be a reason for us to exploit nature without restrictions. We need to realize that every creature has its own place in God's circle of love. God found all created things 'good' and therefore we must respect this 'goodness' in nature. In my opinion, in spite of its many positive aspects, *imago Dei* does not seem to succeed in this.

Second, being *imago Dei*, the human being is created not to be alone, but to be in communion and relationship with the Creator, with other humans, and the natural world. It is through these spectrums of relationships that we realize our dignity as persons. Creation is valuable not just because it is useful to us, but also because it is valued by God and is found

to be 'good' (Grenz 1994, 186). We must value nature through our relationships, and as Houtepen (1990, 75) says, we need to foster a caring attitude towards the natural world. *Imago Dei* gives importance to the relational dimension, but restricts it mostly to the interpersonal level. Relationship with other human beings and God are important, as *imago Dei* upholds, but stopping there would be against the plan of God for creation. It is therefore necessary that we go beyond interpersonal relationships and extend our care to the rest of creation. Fostering relationships and respect for all life are fundamental theological choices that the human being should make, so that we may improve the quality of our relationship with the Creator and the whole of creation. Any sound theological anthropology must take account of this holistic dimension. In my opinion, *imago Dei* does not recognize this sufficiently.

Third, we can emphasize that the capabilities for moral reasoning, free choice and responsible activity differentiate the human being from the rest of creation. This brings humanity not only to a privileged position, but also to a responsible one. The human capacity to think rationally and critically cannot be seen as a licence to exploit the natural world according to one's whims and fancies (Labuschagne 1990, 10-11). As beings endowed with rationality and freedom of choice, we are to act in a morally responsible manner in dealing with nature. Every human action, therefore, that does not comply with the demand for responsibility has to be brought into question. To image God responsibly, the human being has to extend the sphere of responsibility beyond its kin (mankind), to the non-human world. In my opinion, *imago Dei* closes down the avenues for an inclusivistic approach with regard to nature, by overemphasising the role of the human beings and thus falls into a theological fallacy.

Fourth, theologically speaking we have good foundations to encourage the human being's creativity. True freedom means that our talents and capabilities should be at the service of God and directed towards the enhancement of His creation. By sharing in this creative activity, we share in the fullness of life that God has willed for us. Humans are called to become themselves. 'Human persons are not to be understood merely from the perspective of their past histories or from that isolated moment that we refer to as the present. They are oriented towards their future' (Ratzinger 1995, 49). This opens up the horizons from the distant past, to the present and from there to the future, to that which is not-yet. Very often people understand the role of the human being as a passive one. But I am of the opinion that we have enough theological foundation to promote the human being's active role in creation. In my opinion *imago Dei* does not

succeed in maintaining a proper balance between human being's 'creative capacity' on the one hand, and the 'createdness' on the other. With the abilities received from God, the human being is called upon to perfect the earth and to continue God's creative action (*creatio continua*) in the world (Labuschagne 1990, 16).

I do acknowledge that *imago Dei* has played an important role in regulating our relationships with God, with other human beings and with the natural world (Case-Winters 2004, 813-826; Wirzba 2003, 123-124). In spite of the many positive aspects, it fails on several grounds and turns out to be theologically incompetent, ethically inadequate and strongly anthropocentric in regulating our relationships and our treatment of nature. This has to do with its overemphasis on the dignity of the human being, the inclination to be exclusive in attributing value and concern, its partiality in dealing with creation by maintaining an extremely personalistic viewpoint and through its unbridled glorification of interpersonal relationships. In the following part, I would like to suggest *'created co-creator'* as a more viable, theologically qualified and morally competent theo-anthropological category.

Towards a More Adequate Anthropology: The 'Created Co-Creator'

As is evident from our previous discussion regarding the limitations of *imago Dei,* it is a necessity that the role of the human being be rethought and redefined from a theological perspective. What should be the role of the human being within the natural world? Should the human being play the role of a servant, of a steward or that of a tyrant? The question as to the 'rightful place of the human being' is a very pressing issue. The interesting part of the whole discussion is that sometimes these questions are asked by humanity itself and at other times, these are addressed to humanity (Hefner 2004, 733). On the one hand, we ask how the situation can be improved, how our relationships can be bettered, how the environmental degradation can be reduced and how we can contribute to the protection of nature. On the other hand, as Hefner says, 'in their mute and yet dramatic way, *our fellow citizens in the commonwealth of the natural world* – plants and animals – ask us the question (Hefner 2004, 733)'. These questions need to be answered, because we cannot afford to wait any longer. In this section, I will attempt to reinterpret and rediscover the rightful place of human beings within creation, based on a theological reflection on the 'created co-creator'.

Historical Development of the Term 'Created Co-Creator'

The beginnings of the proposal for understanding the human being as created co-creator can be traced back to 'Unsere Verantwortlichkeit gegenüber der Schöpfung', an article published by Frits Blanke in 1959. In this article he called for the acceptance and appreciation of 'co-createdness' which he called *'Mitgeschöpflichkeit'* and suggested that we all belong to the one family, no matter if we belong to the human race or not.

> Alles, was da lebt, ist vom selben Schöpfergeiste durchwaltet. Wir sind, ob Mensch oder Nichtmensch, Glieder einer groβen Familie. Diese Mitgeschöpflichkeit (als Gegenstück zur Mitmenschlichkeit) verpflichtet. Sie auferlegt uns Verantwortung für die anderen 'Familienglieder' (Blanke 1959, 198).

In 1970, Karl Rahner used the same idea in his discussion about the problem of genetic manipulation in his article 'Zum Problem der genetischen manipulation aus der Sicht des Theologen', although the explicit use of 'created co-creator' was not yet introduced as such (Rahner 1970, 135-166). The term 'created co-creator' as is presently used in scholarly circles was introduced in 1984 by Philip Hefner. This was developed into a full-fledged theory through the publication of his book *The Human Factor. Evolution, Culture, and Religion* in 1993. In this book he develops a theology of the 'created co-creator' and brings it in relation to divine purposes for all creation. The term has attracted wide attention not only from theologians, but also from philosophers, scientists, and people who have been on the lookout for finding a category that could do justice to the unique role of the human being, while taking the whole creation into account. From the time of its introduction, it has exerted a lot of influence in theological anthropology. Just as with anything new, people have reacted very differently to this new term. Many accepted it with great satisfaction. Some rejected it since they looked at it from the point of view of 'playing God' and yet others have found it a vital concept that should be developed further (Willer 2004, 844-847). In my opinion, this concept is significant to make breakthroughs in understanding our role in creation.

Theological Core of the Vision: Interpreting Human Beings

Philip Hefner's efforts to come to an adequate theo-anthropological category can be considered as an original contribution in understanding the place of humans in creation. According to him:

> Human beings are God's created co-creators whose purpose is to be the agency, acting in freedom, to birth the future that is most wholesome for the nature that has birthed us – the nature that is not only our own genetic heritage, but also the entire human community and the evolutionary and ecological reality in which and to which we belong. Exercising this agency is said to be God's will for humans. (Hefner 1993, 27)

It is interesting to note that this concept is very original, useful and compact in several ways. First, it puts forward *'one unified image'* in theological anthropology by which we can summarize the whole lot of our understanding about the human being. Second, it makes room for the *'conditionedness of human existence'* and suggests that the human being can be seen as the crucial element in the evolution of the whole world. Third, we can see *'freedom as the qualifier'* of this conditionedness, through which God enables His creation and achieves His purposes (Hefner 1993, 31-32; Hefner 2005, 186). In my opinion, the theory opens up new horizons and offers us new possibilities to reinterpret the role of human beings within creation. Hefner points out the three important elements of his theory as follows:

1. The Human being is created by God to be a co-creator in the creation that God has brought into being and for which God has purposes.
2. The conditioning matrix that has produced the human being – the evolutionary process – is God's process of bringing into being a creature who represents the creation's zone of a new stage of freedom and who therefore is crucial for the emergence of a free creation.
3. The freedom that marks the created co-creator and its culture is an instrumentality of God for enabling the creation (consisting of the evolutionary past of genetic and cultural inheritance as well as the contemporary ecosystem) to participate in the intentional fulfilment of God's purposes. (Hefner 1993, 32)

Human Beings Are 'Created'

In the term 'created co-creator', both the noun and the adjective are equally important. The *'created'* in the 'created co-creator' calls for some explanation. The term 'created' refers to our own 'createdness' which affirms that ultimately we are also creatures, and as such, dependent. This dependency is to be referred to God and we are totally dependent on the creative grace of God for our very origin and existence (Hefner 1988, 522). The terms 'the way things really are' and 'what really is' are to be used in reference to God. Since we are 'created', we belong to 'the way things really are' through our conditionedness and freedom. This also acknowledges the fact that as 'created' beings, we are not the designers of our own place and role in the world. As Hefner says, 'to be created is to be derived, to be dependent upon antecedent factors (environmental, biological, cultural) as well as contemporary sources (environmental, cultural)' (Hefner 1993, 35-36). The term gains its theological significance when we make the reference to 'God'. The conditionedness of our existence that we experience has its origin in the divine creative activity. God should be seen here as the foundation and the corner stone of the process from which the human beings have emerged (Hefner 1993, 36-38).

> *Homo sapiens* did not emerge to be conquistador, dominating and pillaging as the opportunity arose. Rather, as creature, the human serves the process of the creator, and all of the possibilities, activities, and achievements of the creature are to be referred to the created order and the purposes with which it has been endowed. (Hefner 1993, 36)

Two qualities that characterise this being 'created' are the aspects of *belonging* and *receptivity*. We must be conscious of the fact that for long, the human being has been thought of and understood in dualistic terms. More than ever, our times insist on the fact that 'we can no longer tolerate understandings of human nature that insist upon separating us from our fellow human beings, from the natural ecosystem in which we live, or from the evolutionary processes in which we have emerged' (Hefner 1997, 198). Our belonging to the world is a specific property of our existence. This also brings us in contact with the other human beings and surpasses the interpersonal realm and extends the sphere of concern and care to the nature and other living beings. I am of the opinion that a coherent vision on the human being should certainly take into account not only the relationship to God and to other human beings but also to the natural world and nonhuman beings.

Human Beings Are 'Co-creators'

By using 'created co-creator' as a new category in theological anthropology, we emphasize not only the 'created' dimension (with reference to God, other human beings and the natural world), but also the 'creative' one. The term 'co-creator' refers to the freedom of the human being, which is a fundamental condition of existence. Through this freedom, human beings are capable of facing situations in which they have to make choices, which have an enormous influence in shaping their life. They are called to make these choices in freedom and furthermore, they also need to give good reason for these choices. The specificity of the human being consists in the fact that it is only humans who are able to make the decisions, and are in charge of shaping their life and are called to justify their choices (Willer 2004, 841-858). To put it in Hefner's own words:

> Humans cannot avoid the freedom to make the choice, and only humans can construct the stories that justify such choices... environmental policies require a myriad of value judgments concerning the comparative values of the earth and of humans and other forms of life. Humans cannot avoid such policy-making and the value judgments inherent to that policy. Further, only humans can construct the stories that provide the justifying arguments for such judgments. (Hefner 1993, 38)

Richard Fern offers similar ideas in *Nature, God and Humanity* where he speaks about the freedom of the created order. The possibility to make choices is a gift that God has given His creation:

> God grants creation its own, creative freedom for the sake of a love, a mutuality, that cannot exist apart from genuine freedom and risk. It is not enough to have created creatures with whom he can talk, creatures capable of grasping creation and analogically, himself in thought, God must give these creatures and, thereby, creation, the nature he has so lovingly made, the capacity to choose their own future, to form and act for reasons, ends, and goals, of their own... Having placed the future of creation in its own reflective awareness, God waits for the free reciprocity of his continuing, sustaining love. (Fern 2002, 160)

The qualities of belonging and receptivity are morally qualified since human beings are self-conscious and are therefore able to plan their life in the world. While carrying out their plans, they are conscious of their

sense of belonging to the natural world of which they are part of and they are able to receive feedback and alter the process by making use of the accumulated wisdom. The freedom of the human being is a determined human condition. (Hefner 1993, 97-98) Rational reflection and moral action are essential elements herein. This also emphasizes the possibilities for 'human becoming'. Without freedom, the human beings will not be able to play a creative and constructive role in the world to which they belong. They are designers of their own destiny, but always in reference to God and his purposes for the world. As creatures, human beings are called to be 'co-creators' with God, in fulfilling God's purposes for creation.

Freedom as the defining condition of the human beings highlights the extraordinary characteristics of the human creature and the special place that this creature has within the ecosystem of the planet. But this freedom should not be mistaken for equality with God, the Creator. As we have described above, human beings are creatures and can therefore never be considered equal to God, since they are dependent on the Creator for their creative activity (Hefner 1993, 39). The '*co*' in the co-creator has to be emphasized sufficiently if we are to take the term in its right meaning. This suggests that we are participating in the creative action of God, not on our own, not in subordination, but in partnership. It also confirms that the future is open and undetermined. The human being can give it direction whenever needed, or change the course whenever found necessary (Hefner 1989, 524; Peterson 2004, 829). As is explained above, the creative activity of the human being finds its source in God the Creator who gives it to humanity with love. It is an essential characteristic of human beings as 'co-creators' that we can participate actively in the unique plan of God.

To have a proper understanding of the 'created co-creator' we have to place it in the context of creation and its purposes. Without this essential dimension, 'created co-creator' loses its meaning. The purposes of God for creation connect the human beings to the destiny willed by God. 'Both the creation and the human being have purposes for their existence, and the two are intertwined within the larger notion of God's destiny for the entire creation' (Doncel 2004, 794; Hefner 1993, 39; Russell 1994, 148-150). From a theological point of view, nature is to be understood and valued as God's creation. Nature is actually all that we have in our efforts to understand the world. Hefner opines that even those religions that speak of revelation, have to recognize 'that revelation happens within nature, and that it is received, understood, and interpreted through the thoroughly natural structures of a natural animal, *Homo sapiens*' (Hefner 1993, 41).

As human beings we are embedded in this world, out of which we ourselves have evolved. The world (nature) becomes the stage for all our operations. From this perspective, Sittler considers the world as the 'theatre of God's grace'. Viewing nature in this way can help us to value nature and to care for it (McFague 1997, 153-154). The natural web of interrelationships and interdependence, within which we find our place, suggests that the purpose of human existence should be referred to this web of interrelationships. The human construction of purposes has a great influence in the natural world especially if we place it in the circle of relationships. The concept of 'wholesomeness' can help us to find an appropriate manner in which humans can contribute to the purposes in creation. In our understanding of the human being, nature receives great significance.

> ... nature is the arena for human purpose and that concern for nature's wholesome state provides a pragmatic criterion for our thinking... Nature is the medium through which the world, including human beings, receives knowledge, as well as grace. (Hefner 1993, 42)

The idea of '*wholesomeness*' should be scrutinized thoroughly in order to come to a consensus regarding what is good for nature. Our behaviours have different effects and outcomes and therefore, they do not bring the same result for human beings and the whole of nature. This is true especially with regard to the application of technological innovations and possibilities. We have to make choices in this technological civilization within which we live. This particular aspect demands of us that we take decisions that are scientifically and technologically responsible and theologically coherent. If we take the evolution of humans into account, we can understand the meaning of nature as follows: '... the appearance of *homo sapiens* as created co-creator signifies that nature's course is to participate in transcendence and freedom' (Hefner 1997, 197). Human beings are called upon to discern the requirements for adequate living and they must learn to meet the challenges that are posed to them. The environmental collapse that we face today can be seen as a result of our incapacity to cope with the technological era. It is not enough that we make choices and transform them into actions. We need to be morally responsible and give justification for our actions.

Opening Up New Theological Horizons

Christian theology reiterates the fact that God is the ultimate source of everything. The belief in God as 'Creator' is the most fundamental statement of our Christian faith, and it is the foundation on which our life as Christians revolves around. The emergence of the 'created co-creator' opens up new horizons in theology, in our thinking about God as the Creator, the place of the human being as 'created co-creator' within it and the value of nature as creation. The 'created co-creator' is the plan of God for the world and it is through the human being as created co-creator that God wants to bring His purposes for the world to fulfilment. Keeping this in mind, I would like to reflect on the possibilities that the created co-creator can offer us in dealing with the environment.

First, the created co-creator emphasizes the fact that the human being is first and foremost a creature, together with the natural world. Humankind is not to be seen as an autonomous entity, but has to be seen in relationship with a God who creates in love. In this way, we are dependent on the Ultimate Reality, God. This dimension of '*createdness*' and '*dependence*' qualifies our existence in the world. The correlation between the nature of the world and the nature of the Creator manifests itself fully in the human being. It is this 'createdness' that connects the human being to God and to the natural world (Hefner, 1988: 522; Hefner 1997, 203; Peterson 2004, 828-829).

Second, the 'created co-creator' opens up new avenues for taking care of nature. As we have already stated, creation is grounded fully in God who has freely desired and caused everything into being. The fact that we are 'co-creators' with God is not a licence to act as we like. Furthermore, there is no reason for us to be arrogant as 'co-creators' because we need to acknowledge that this gift comes from God and that it is a state of 'givenness'. It should be seen as '*God's will for human beings to be co-creators*'. Nature, together with the human beings, as creation should be seen as the realm of intentionality, which is to be perceived within the realm of God's intentionality. As Hefner says, 'this theological framework illuminates the fact that human intentionality exists not for its own sake, not only for the sake of the human species, but as the expression of and for the sake of the larger intentionality of God's creation, nature' (Hefner 1997, 203).

Third, the concept '*creatio continua*' acquires its fullest meaning in the human being as 'created co-creator'. Creation has to be understood, not only as that which is present here and now, but it also refers to the manner in which God sustains His creation continually. The world depends con-

tinuously on the ongoing grace of God. From the point of view that God continues to care for the natural world, we can accept that the nonhuman creation is valuable and that it is an entity that humans can trust. We are not to view the natural world as antagonistic to our life and progress, but as complementary, supportive, and strengthening to our well-being. The earth has to be seen as a friendly home for humans (Hefner 1989, 523; Lobo 1991, 79-80, Russell 1994, 144). The earth is not an enemy whom we have to fight, but a friend who needs our care and concern. There is also a correlation between God, humans, and the natural world because these three are partakers in the creative activity. We are called to make choices and to direct the course of events as 'created co-creators' (Grenz 1994, 168-172; Hefner 1989, 523). Humans have to keep in mind that our creative activity and the way we are able to develop and bring things into being, is a 'dependent' creation, which is in no way a restriction, but a possibility to contribute our share constructively in the continuation of creation. The use of the latest modes of science and technology are encouraged here, only if they are in consonance with the freedom that God has given and the responsibility this demands of us (Drees 2002, 643-654).

Fourth, through the creation of the 'created co-creator', God lays bare his plan for the further evolution and future of the world. Our example in this undertaking is Jesus Christ, the new Adam, who can also be called the 'prototype of the true *humanum*'. It is in and through Jesus our model that God reveals to us the possibilities and potentialities of humans and what humanity can yet become. The Christ event can be taken as the event to which we are called to adapt ourselves. 'In his life, death, and teachings, Jesus offers us the possibilities for raising human living to a higher plane, one which will reveal new ways of adapting to the reality system of nature and of God' (Hefner 1989, 524; Stone 2004, 761-762). The love principle that Jesus proposed and the Trinitarian relationship can be seen as guidelines to go beyond the boundaries of our interpersonal relationships and to extend our love also to the natural world. Going beyond the boundaries of kinship is a basic Christian attitude that can be of enormous importance in caring for nature and in building up the natural environment (Hefner 1989, 524; Hefner 1997, 203; Hill 1998, 263; Irons 2004, 777-778; Ruether 2005, 112-113). By taking Jesus as our role model, we can bring about changes in our attitudes towards nature and inculcate qualities that can strengthen our relationship with God, other human beings, and nature.

From a theological perspective, we can summarize this new theo-anthropological concept, created co-creator, as follows:

> *Homo sapiens* is God's created co-creator, whose purpose is the 'stretching/enabling' of the systems of nature so that they can participate in God's purposes in the mode of freedom, for which the paradigm is Jesus Christ, both in respect to his life and to his understanding of the world as God's creation. (Hefner 1997, 203-204)

Conclusion

In this essay, I have attempted to reinterpret the role of human beings within the framework of Christian theology. It is beyond doubt that *imago Dei* is too broad and ambiguous as a theo-anthropological category. It lays too much emphasis on the dignity of human beings, to the extent that the nonhuman nature has no possibility to enter into the sphere of concerns. Besides, it takes only humanity into account and the rest of creation is sidelined and easily forgotten. But the 'created co-creator' opens doors and windows and allows the nature and natural systems to enter its sphere of concerns. This is based on the belief and realization that creation has its origin in God and that the human being is also a 'created entity', just like the rest of nature, taking its place in the evolutionary process. Due to its anthropocentric overtones, *imago Dei* encourages an arrogant attitude towards nature, by glorifying the interpersonal dimension beyond limits. It does not really open up possibilities for entering into a relationship with nature. But the 'created co-creator' is situated within the nature and its processes. The 'created co-creator' is truly part of nature and thus enters into relationship with it. The relational dimension is not restricted here to God and other human beings only, but is extended towards the natural world.

One of the drawbacks of *imago Dei* is that the sphere of concerns and thus also the sphere of responsibility are restricted to the human beings. The 'created co-creator' acts in freedom and exercises responsibility not only for oneself or for one's own species. The realm of responsibility is extended here to the whole creation. This holistic view of creation enables the 'created co-creator' to take a holistic view of responsibility as well. The human being is placed within creation with the responsibility to be a 'co-creator' with God, with the ethical imperative to care for the whole creation. As part of God's creation, the human being is within the creation, not above it. The concept 'created co-creator' accepts the fact that humans are special, but this speciality is to be placed within creation and is to be realized by being at the service of creation.

Imago Dei does not give enough room for the human being to realize fully the creative dimension, which is a gift of God. Though Christian theology emphasizes the significance of this creative dimension, there seems to be a hesitation in taking it up as our legitimate role in creation. The 'created co-creator' accepts this gift of creativity from God with gratitude. The human being is in close collaboration with God in order to bring God's purposes for creation to fulfilment, in freedom and responsibility. It is not seen as the chance to become equal to God, but as a possibility to take part in God's creative activity so that the act of creation may go on. '*Creatio continua*' is an existential condition of the world and the role of the 'created co-creator' is to bring this condition to its full realization and fulfilment.

To conclude, I do not intend to suggest that we have to get rid of *imago Dei* as a category altogether, because I am conscious of the fact that it has a number of positive aspects which are significant. In my proposal of the 'created co-creator' as a better category in theological anthropology, I have tried to integrate the positive aspects of *imago Dei* and I have attempted to go beyond its limitations and to expand the realm of possibilities. The theological arguments that I have presented above make the case for the affirmation of the 'created co-creator' as a better, theologically qualified, and constructive theo-anthropological category to reinterpret the role of human beings in creation.

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7   Seeking the Depth of Nature in a Scientific World

Forrest Clingerman

While differences of opinion abound on how religion ought to confront environmental issues, one potential point of agreement is that contemporary scientific knowledge and religious knowledge are all too often detached from each another – to the detriment of the environment. The divide between scientific and religious thinking (starting with the rise of mechanical philosophy and in some respects culminating in various nineteenth-century tracts on the 'warfare' between science and religion) can be correlated with a 'secularization' of nature by science. Technological advances created new ways of changing and destroying the environment, especially after scientific thinking was freed from religious strictures and conceptualizations. However, the 'environmental crisis' that has resulted from modern technological living has forced us to rethink our almost exclusive reliance on such 'calculative thinking', even as such large problems (to name a few, climate change, loss of biodiversity, resource depletion, wide-scale drought) are discussed prominently in the media. A completely secular foundation for our scientific worldview has been found wanting, yet we cannot simply return to pre-reflective religious views on science and nature (cf. the essay by Szerszynski in this volume). As heirs to both the Enlightenment and postmodernity, contemporary Christian theology must re-evaluate how it interprets the meaning of nature in light of the impossibility of returning to a pre-modern garden paradise. In other words, we must reintroduce spirituality and religion in our understanding of nature, without denying the power and usefulness of scientific knowledge.

But how might Christian theology work toward a re-evaluation of its understanding of nature? To be sure, most 'eco-theologians' recognize that both the sciences and theology together are necessary for interpret-

ing nature. What is often lacking is the elaboration of an adequate method through which 'eco-theology' can bring these disciplines together. In this regard eco-theology can learn from recent discussions on modelling that have occurred in religion and science dialogues. The contemporary debates over the environment show the need for a reinvigorated religious and spiritual interpretation of nature, just as they show the continued need for scientific and other forms of knowledge. In many cases, however, scholars subordinate theology to science, or vice versa. Allowing for parity across disciplines can occur only through a reflective and systematic methodology. If we are to overcome the scientific and religious dogmatic 'calculative thinking' of the past, this method cannot grant primacy to either scientific or theological dialogue. Instead, the method of an ecological theology must place disciplines into true dialogue, finding a mediation between scientific explanation and theological understanding. The present essay thus enters the methodological debate by arguing for a more hermeneutical eco-theological method – a method that emphasizes theological modelling and the use of 'emplacement' as an organizing principle.

As a contribution to this methodological debate, this essay first will present a characterization of the context of types of environmental theology and explain how the method of modelling can be advantageous for environmental theology. Next, I will explain a specific process of theological modelling that will be beneficial for environmental theology, drawing on the work of Klemm, Klink, and Scharlemann. Finally, I will argue for the use of 'emplacement' as a way of identifying the domain of a theological model of nature. Theology, in dialogue with other disciplines, can advance our understanding of nature only when it becomes more conscious of the process of constructing theological models. Theological models, using methods akin to those found in the construction of scientific models, offer a nuanced comprehension of nature and open the possibility of a testable and clearly defined theological knowledge of the natural world. Using the process of modelling, theology can determine the depth dimension of the abstract and lived elements that conjoin the human relationship with nature.

Theological Modelling and the Theology of Nature

Many theological projects have emerged in an effort to address the ecological crisis and the religious dimensions of nature more generally. Assessing these attempts, we find that several theological projects unwittingly create barriers between theology and science through their conception of

the communication between the two areas of study – perhaps partially a result of the complex history of the 'disenchantment with nature'. At the risk of oversimplification we can divide these projects of environmentally-focused theology into two broad categories. In both cases, what often occurs is that one discipline dictates the parameters of discussion for the other discipline. In effect, science or theology presents a monologue without allowing for dialogue.

The first type of environmental theological project might be described as what Ian Barbour calls, in the context of the field of religion and science, a 'theology of nature' (Barbour 1990, 26). A theology of nature, says Barbour, starts from Christian theology and tradition in an effort to understand our contemporary experience. Thus, some theologians address environmental problems by revivifying confessional and biblical language as a means to alter Christian attitudes (e.g. H. Paul Santmire). Others seek to identify a spiritual or mystical dimension within the tradition, seeing nature as a sacramental subject (e.g. Larry Rasmussen) or lifting figures like St Francis up as exemplars (e.g. Lynn White, Jr.). Thus, one theological approach to nature is found in the attempt to mine the tradition in order to justify Christianity as a worldview that is adequately explanatory and continually relevant for ecological concerns. But this conceptual reliance on tradition can obscure the way in which we live in a secularized world, and thus how we can see nature independently of its supposed mystical or traditional dimensions. Further, this method often fails to examine or to understand concrete instances of nature and the environment, and instead relies on vague generalizations or idyllic portrayals of the natural world.

The second broad type of project moves in the opposite direction, beginning with scientific understanding (broadly speaking) as the framework by which to redefine Christian theology. While Barbour identifies this with forms of natural theology, we might better identify this with recent programmes of 'religious naturalism'. Religious naturalists such as Ursula Goodenough focus on scientific understanding to rebuild doctrines consonant with a scientific paradigm. In order to develop religious doctrines derived from science, a minimalistic definition of religion is often required. Science is argued to be the most valid and persuasive description of the world and thus scientific understanding provides the basis for any adequate religious worldview. But religious naturalism might also present problems. Often religious naturalism uses a minimal definition of its object of description, which does violence to religion. Under such a definition, the complex interaction between thought, ritual, belief,

morality, community and individual is frequently rendered largely invisible. Equally as troublesome, it can move from a clear understanding of the norms and canons of scientific knowledge to an unclear and imprecise definition of what constitutes religious knowledge.

Both of these categories move between religion and science in a single direction, implying that our knowledge of nature arises from either religion or the scientific disciplines first and foremost. Not only does this inaccurately show the complexity of our understanding of the natural world, this can produce an estrangement between the work of theology and that of other disciplines. To avert this estrangement, therefore, environmental theology must focus on a method that draws on the strengths of both of these categories, while offering a way that avoids the flaws that might arise in each. Foremost, ecotheology must find a method that systematically fosters mutuality and parity among disciplines while simultaneously seeking knowledge of nature within the context of theology. Put otherwise, environmental theology must seek a method that instantiates a true dialogue on nature.

I would like to argue, thus, that a more hermeneutical and dialectical framework is the preferred alternative to the two categorizations of environmental theology noted above; what is needed is a method that offers critical reflection on the dialogue between theological understanding and scientific forms of knowing. This, I further argue, is found in the process of constructing theological models.

Why are theological models relevant in light of the current concerns? Theological models demand a rigor that allows for a common ground between theology and the sciences, thereby promoting an equal footing between disciplines while also maintaining their uniqueness. The creation of models in both science and theology has several important qualities. Building models requires knowledge of the given domain, providing a 'fit' with the data. It also requires imagination and creativity – something that Sallie McFague's work on modelling has pointed out. Echoing McFague's emphasis on metaphor and imagination in modelling, David Klemm and William Klink point out: 'Models participate in the metaphorical capacity of provoking the mind to think something new by seeing a resemblance previously unnoticed and unthought' (Klemm and Klink 2003, 503). Further, models are constructed and are developed in light of both cultural and historical conditions, are innovative, and open to change pending new data. Models are unable to portray the entirety of the data, and thus can be placed alongside competing models. Even when successful, models are continually questioned and tested in an effort to determine new facts

and blind spots. Ultimately, a model that is successful and more encompassing becomes a paradigm, or an 'overarching conceptual framework' for the domain.

These qualities of theological modelling are exemplified in the proposals of Robert Scharlemann, David Klemm, and William Klink. Klemm and Klink elaborate and systematize the idea of models initially brought forth in Scharlemann's essay, 'Constructing Theological Models'. Scharlemann begins by noting that theories (defined simply as 'well-established models') and models get data from the two places: their 'basic structure of domains' and the conjunctives that arise from these structures. Scharlemann sets the rationale for utilizing models in any discipline: a model is not an observational description or placeholder, and it doesn't seek to be a replica of how a thing really is. Instead, a model is a construction that attempts to show how we can cognitively deal with an object. Thus, models are constructed, non-natural, and they are testable. 'In sum, what we mean by a model is a construct that provides us with a methodological way of dealing with an object being investigated' (Scharlemann 1989, 130). The difference between theological and other models is found in the *domain* to which the model belongs. Theology can build models independently of other areas of study, but it is dependent on other domains for *content* – theology has no material domain of its own.

Klemm and Klink argue that such models offer an opportunity to move beyond certain impasses present in the contemporary theological scene. For them, this is the challenge: 'Theology is often perceived as a marginalized discipline in contemporary intellectual life' (Klemm and Klink 2003, 495). According to the authors, modelling is a way for theology to address its previous silence regarding the perils confronted by contemporary society. As Klemm and Klink state it: 'the silence of the theologian has consequences. Thinkers who do try to understand and to interpret what is happening in our world today do not look to theology to assist them in the task of making sense of our cultural and social lives' (496).

Consequently, contemporary theology is forced into the horns of the secular and the confessional, causing a 'marginalization of theology' in the academy. What is needed to overcome this is a way of showing how theological discourse constitutes *knowledge* in the contemporary world. By moving beyond social constructivism and naïve realism, science maintains a critical stance that has allowed the scientific disciplines to dominate intellectual discourse in contemporary culture. For Klemm and Klink, theology must move in similar fashion to reclaim its place in the *cognitive* sphere of cultural discourse. 'We claim that theology can and should as-

sume an important place in the current scholarly debates. However, the price of admission is the capacity both to make testable knowledge claims and to justify the possibility of so doing' (498). This emphasis on *testability* is a key dimension of modelling, but it is not often adequately addressed. For Klemm and Klink, testing is an activity that places theology squarely as a scholarly discipline: 'The point we are making is that at each stage of evolution and development of a model, it must be testable; that is, it must be capable of making predictions that can (perhaps only in principle) show the model to be wrong' (504).

Testing is at the heart of legitimating theology in the context of contemporary intellectual discourse, therefore, and it is by way of models that theology offers testable claims. Models – both scientific and theological – are constructed to manipulate and test data; thus, it is not the case that theological models have not been used in the past, but that they have not been constructed in such a way that we can independently verify and test them. The main purpose of a model is to 'investigate the structure of a domain... More generally, models enable one to 'see' why something behaves the way it does' (503). It is the 'why' question that makes models unique, for their purpose centers on showing why certain things are correlated. In other words, models provide a sense of meaning to a given correlation. Further, a model is built in an attempt to show the structure of a domain; 'a structure is what gives unity to the essential elements that constitute a determinate domain' (502). Models are not dogma or inalienable propositions, but rather 'models are created as tentative exploratory means for understanding new phenomena' (507).

The broader situation in which theology as a discipline finds itself is analogous to the two broad categories of theological approaches to nature and ecology; the division between theologies of nature and forms of religious naturalism echoes the bifurcation between confessional and secular theologies noted by Klemm and Klink. Therefore, if the method that Klemm and Klink offer assists in overcoming these problems, then it should also suggest an alternative position at the divergence between confessional and secular theologies on the topic of nature. What makes theological modelling a unique and viable alternative for studying the natural world? It offers a way for theology to present knowledge claims that take seriously environmental science and other disciplines, in such a way that offers legitimacy, uniqueness, and independence to both science and theology. In other words, modelling resolves the methodological situation by presenting a way of systematically placing theology and the sciences in dialogue in a truly mutual way.

The Procedure of Modelling for Environmental Theology

If modelling is an appropriate and advantageous method for an environmental theology, what is the process through which one models nature? To begin, we must remember that the domain of theology is unique, because theology does not have a domain of its own. It seeks to find the religious and spiritual dimension of all other domains, without having a domain that is demarcated as exclusively theological. Therefore, the purpose of a theological model of nature is to find the religious dimension of nature, which entails accepting and valuing the variety of ways we understand nature's other dimensions. Theology must account for the work of other disciplines, but it is not beholden to them; there is an openness to dialogue within theology.

The process of constructing a theological model has several steps. Scharlemann presents a basic view of modelling originating from the claim of the lack of domain in theology. For Scharlemann, theological models are built through two tasks. First, one identifies the basic structure of a domain, and second, one adds a 'theological conjunctive' (the phrase, 'God is...') to the structure. In theology, *models form an identity in difference, allowing us a dimension of transcendence in the midst of disparate facets of the structure* – in other words, a different unity, 'one established by the transcendence or depth in the domain' (Scharlemann 1989, 132). Such a model can potentially start from any domain, although some domains might be more useful than others. Scharlemann is careful to point out that theological models can use material from any domain without having to give a metaphysical reading of it. '"Theology", then, refers either to the whole set of conjunctives, in whatever domain, or to a theologics that, like mathematics, is an a priori symbol system needing some incorporation into models before it can provide knowledge of actual reality' (Scharlemann 1989, 139).

Klemm and Klink take Scharlemann's basic outline and elaborate on it, showing five steps for the construction of a theological model. The first step is that a domain must be chosen; since theology has no material domain of its own, this means that any domain of study can be used as the basis for a theological model. Next, we must describe the *structure* of the chosen domain. At this point, there is no substantial difference between theological and scientific models. Furthermore, there is not a sense that theology is a different or complementary science. Instead, the researcher seeks to identify and describe the structure of a domain in ways that accurately reflect the framework of the domain itself.

Third, we must identify and outline the *depth* of this structure. By 'depth' of the structure, Klemm and Klink are making a contrast with the 'surface' of the structure, which simply posits the different elements without presenting their overall meaning or identity. 'The 'depth,' therefore, means the standpoint from which the investigator can see the unity in difference of the structural elements. This standpoint enables one to see how the elements in the structure are necessarily related yet irreducible to each other. *The depth of the structure is a presentation of the fundamental principle according to which the basic elements of the structure are seen as both unified and preserved in their difference.* In this sense the concept of depth is always implied in the concept of structure: any structure has depth insofar as the structure is a unified, coherent structure. The depth of the structure is thus immanently present in the structure itself as its ground, basis, and principle' (Klemm and Klink 2003, 515).

The usage of the metaphor of 'depth' is greatly indebted to Paul Tillich's theology of culture. In turn, Tillich's discussion of 'depth' is based on a correlational understanding of theology, which offers a more nuanced and dialectical understanding of interdisciplinary scholarship. Klemm and Klink thus move past many objections found in other proposals. Foremost, if their understanding of the relationship between structure and depth is accurate, then it allows theological models to move beyond being mere metaphors for a specific confessional community. A theological model of nature offers a structure that is testable, in order to then study the depth of this structure. In the case of theological treatments of nature, a model is valid only if it coincides with the results of models of nature from other disciplines. The importance of the depth of the structure is that it provides a unique element to theological discourse, but it simultaneously shows us how theology can participate within a unified epistemology wherein it can be questioned by other disciplines.

The fourth step correlates the depth of a structure with its religious dimension. That is to say, Klemm and Klink make explicit that the theological connection of God and world is paralleled in the model's connection of depth and structure. A model is theological when a theological conjunctive, such as 'God is...' (Scharlemann) or 'God appears as...' (Klemm and Klink), is added, for this correlates the depth of meaning with God. 'God is not literally equated with the depth of the structure, nor is the depth of the structure predicated of God. Rather, the formulation asserts that in God's being God, God appears as what is literally not God but the depth of the structure. The depth of the structure is where we find the manifesta-

tion of God's being as God' (Klemm and Klink 2003, 516). This correlation presumes reflexive thinking about God, in other words; it is thinking that 'bends back reflexively on itself: thinking thinks its own act of thinking' in reflexive thought in such a way that the here-and-now act of thinking is conscious of itself (516).

The final step is that the model is critically viewed and tested. There are several tests for models. Models in any domain must be tested for fruitfulness, coherence, and fit. A model must adequately present that which it models in order to be useful – it 'must account for all of the details at the surface of the phenomenon under analysis' (517). There are also discipline-specific tests. For theology, we must test the model to ensure that the depth acts as both the 'principle on the basis of which one can see the opposing structural elements as both unified and different,' while simultaneously pointing toward a transcendence within the structure (517). That is to say, the depth must be tested to show its being as an 'is/is not' of the structure. For this test, Klemm and Klink outline the use of Anselm's 'that than which none greater can be thought'. The second type of test for a theological model should show that the depth is able to '...manifest the being of God when presented as part of a complex symbol' (518) of the theological conjunctive. This test attempts to show that the depth is an adequate symbol for 'God's being as what God is not' (Scharlemann 1989). This relates to a final test, which is to show that the symbol created out of the theological conjunctive of the model enables our thinking of God – that is, that the model is useful as a model.

The method of modelling described above presents a fruitful way for theology to investigate nature because it allows for a theological conception of nature that accounts for scientific ideas, without simply co-opting scientific results or collapsing into scientific domains of study. We can build a model of nature that reflects theologically on the scientific, religious, and other discourses concerning nature, precisely by seeing the fruitfulness of science as science, aesthetics as aesthetics, economics as economics, and the like. The theological model attempts to discover and test the depth of a given domain, but thereby does not negate the value or independence of a multifaceted study of the domain itself. Thus, ecological science (and other dimensions of the study of nature) contributes to a theology of the environment when theology models the sense in which the structure of nature – seen in the dialogue between varieties of fields – has a 'depth' that theology identifies and studies.

Emplacement and the Modelling of Nature

Developing a fully adequate model of nature is impossible in the limited space available here. What *is* possible is to explain how theological modelling can identify a fruitful domain in order to overcome some of the problems that overwise plague environmental theologies. The choice of domains is difficult when investigating nature, principally because humans are strangely both detached observers and entrenched participants in the natural world. Thus, a theological model of nature must focus on a domain that explicitly accounts for humans as subjects and nature (including humans) as objects. Thus, the concern is to strike a proper balance: a naïve objectivity (assuming nature is an object apart from humanity) would lead to a narrowly confessional or secularized perspective, while a naïve subjectivity (focusing on the human alone) would not allow for appropriate testing.

To identify a domain for the theological study of nature, then, we must resolve a principal problem of the human-nature relationship: humans are simultaneously within and apart from nature, acting through and upon natural processes. We are 'biohistorical' (Kaufman 2001 and elsewhere) or 'biocultural' (Hefner 1993) creatures of nature and culture, an embodiment of the dialectical relationship between the two. In other words, nature can be modeled only insofar as it is understood in light of the complex relationship between subject and object, overcoming both naïve objectivity and subjectivity in favour of a more nuanced viewpoint. Thus a purely objective model is effectively impossible, for no other reason than that we are participating in the thing we study. That is, our very experience of nature includes an interpretation of experience. Humans do not behold nature in simple, passive immediacy, but through a complex mediation that defines our experience of the world. But nature is more than our interpretations – it is, at least in some respects, 'out there'.

Examining this need for mediation between human and nature, I argue that we must focus on the similarity between our relationship with texts and our relationship with nature. There are parallels between the way humans encounter a text and the way that they encounter the natural world. Harkening back to the medieval metaphor of the 'Book of Nature', the parallels between text and nature offer an entry into the modelling of natural places. Just as the interaction between reader and text rests upon the sense of a shared world, so also the 'reading' of nature opens up a shared space that can be studied. Further, just as we read particular texts but not the concept of 'text', so also can we not investigate 'nature' in the

abstract. We 'read' nature in terms of particular places, and in light of our embodied relationship within a given space and time (or 'place'). Our model must account for the experience of the dimensions of place, its textuality, its emplacement. The recognition of a sort of 'textuality' of nature opens the way for the construction of a model, by highlighting how nature presents itself in an exchange of conceptualization, experience, and interpretation. This is done *reflexively*, meaning that the model concentrates on 'thinking about thinking' or 'thinking about what it means to think'. Such reflexivity in thinking means that theology does not seek a model of nature (a form of thinking), but a model of how we think and experience nature (a form of thinking about thinking). Such a reflexive model recognizes the hermeneutical situation in which we relate to nature, rather than attempting to develop an objective model of nature.

What we are delineating amounts to a hermeneutical approach to the natural world. But how are we to model the 'Book of Nature' as a more focused domain of study? It is here that the concept of 'emplacement' becomes essential as a characterization of our reflexive place in the world. 'Emplacement', closely tied to a hermeneutical account of nature, describes how nature arises from the mediation between human and the natural places they live within. As defined here, emplacement identifies the *form* of the interaction between human and nature. More specifically, 'emplacement' is a hermeneutical mediation between (1) a general conceptual framework of place, (2) a concrete instantiation of a particular place, and (3) our (i.e. the experiencing subjects) place in place. We can further clarify these three elements of emplacement. Emplacement includes (1) our objective and abstract conceptualization of nature. Generalized concepts, categories, and theories are a necessary element of our study, even though they are ideal constructs. Our observational frameworks must be systematically analysed and included as constitutive elements of our understanding of place. Emplacement also includes (2) individual, subjective experience of specific natural places. The manifestation of nature is not an abstract concept, but lived and embodied – including the participation of humans as natural beings within the context of a locale. We must also reflect on specific instantiations of nature, such as a particular tree, ecosystem, or place. Emplacement finally (3) includes the structured conversation that occurs between the previous two points. Emplacement reflexively thinks through the existential manifestation of how the human observer relates conceptual thinking with experiential engagement, generalized explanation and specific encounters with nature.

'Emplacement,' as it might be used in modelling nature, echoes a concept that comes from Paul Ricoeur's description of narrativity: 'emplotment' (Ricoeur 1984 and elsewhere). 'Emplotment' identifies the ways in which narrative resolves the tensions between discordant and concordant elements, especially those found in temporal elements of the story. In the present circumstance, it is important to note that we cannot assume that emplacement is merely a temporal or verbal description; rather, it adds a spatial dimension that is absent in Ricoeur's concept of 'emplotment' and other accounts of narrative. That is, it includes human presence and absence within the physical manifestation of *a place* as *place*. This manifestation is seen in the ways that the inscription of place extends into spatial features and elements.

Nature is almost the paradigmatic theological text when structured via emplacement: the intention of the text (versus an 'author'), its ending, and our understanding of its truth and meaning can obtain only within the mediation between subject and object. Yet, unlike other texts, we inhabit the text of nature not only figuratively, but quite literally – we are emplaced in it, such that the meaning that is negotiated is both from within and without, and questioning the simple necessity of past and openness of future. Ultimately, emplacement offers a textual structure that overcomes the tendencies of 'technical thinking,' and without denying the paradox of nature overcomes it. In sum, the domain of our model is not nature as such, nor is it a particular natural place or manifestation. Rather, given our desire to model nature for theology, *the appropriate domain for a theological model is the text of nature as it is manifested in a place and in light of our experience of 'emplacement' within (a) place*. Emplacement, then, provides a beginning point for modelling the textuality of nature. However, the price of this interpretation is that nature does not present itself in a purely objective or immediate way.

The benefits for using 'emplacement' as a domain of study, I argue, are readily apparent, insofar as 'emplacement' presents a discernable structure that can be modeled and tested. Emplacement offers a core concept for structuring nature. Not only do we see the formal structure of emplacement as a systematic way of describing the structure of our encounters with nature, we also see how (for reasons explained below) our emplacement entails aesthetic, ecological, utilitarian and communal forms of interaction. Emplacement moves beyond its own structure toward a meaningful depth of nature – and thus, the cornerstone for gaining theological knowledge from the natural world.

If we conceptualize nature in terms of 'emplacement,' a discernable rational structure emerges through conversation with Tillich's understand-

ing of reason. For Tillich, reason combines the static and the dynamic, the subjective and the objective. 'In every rational act three elements inhere: the static element of reason, the dynamic element of reason, and the existential distortion of both of them' (Tillich 1951, 78). The interplay between subject and object divides reason into four sub-types, which are based on how the mind corresponds with reality: cognitive, aesthetic, organizational, and organic. We can furthermore argue that reason confronts the 'Book of Nature' – at least, when reason moves beyond mere technicality – through a similar division. When taking up the concept of place and the manifesting experience of a place, each of these four aspects or types of reason reflect aspects of the mind (or the subject) and reality (or the object). This means that reason itself defines the way that we integrate the concept of place, the manifestations of a place, and the mediation of these two with our experience of them as subject. Therefore, we can identify four types of emplacement, as manifestations of more general types of reason.

If reason structures the human-world relationship as cognitive and aesthetic, organizational and organic, then our view of nature – as place and emplaced – is structured as place of science and place of aesthetics, as place of community and place of resource. These four aspects of emplacement each constitute a dimension of how humans understand the meaning of the text of nature, when nature is encountered as place (through space and time) and as a place (as defined by the event of dwelling and migration). The first two are, as stated, based on the theoretical, grasping, or reactive side of reason. First, nature can be seen as a place of ecology. Ecologically, place is defined through concepts taken from biology, chemistry, geography, and other sciences. The place can be described through, for instance, its ecological function in a watershed, or its habitat value. Second, apart from our scientific encounter with place, we can 'appreciate' nature as, for example, landscape, scenery, or as a 'vista'. When nature is a place of aesthetics, the place is constituted in ways akin to – but not identical to – aesthetic encounters with cultural works such as art. The second pair of categories of emplacement stem from the practical, shaping, or molding side of reason. The third dimension is best seen when we describe nature through concepts of resource or 'raw material' – in ways that resonate with Heidegger's remarks of the world as 'standing reserve' (Heidegger 1977; cf. Heidegger 1966). Finally, there are views of nature where nature is seen as communal. In this, nature is shaped according to its use as participant in or setting for communal constitution or self-understanding.

If we seek to model nature in these terms, we are seeking to model how we approach 'nature' in a variety of perspectives: through environmental science, for example, or in terms of technology, no less than as 'creation' or other religious terms. While each of us has different experiences, we nonetheless can attempt to model the general ways that we interact with that experience – and how a depth of meaning emerges.

Conclusion: Value and Meaning in the Depth of Nature

I have argued for a methodology and a domain of study as the first steps toward a successful environmentally focused theology. The strengths of this approach are several. Most importantly, a model focused on emplacement can include a diversity of voices – scientific, aesthetic, political, communal, and pragmatic, among others – while at the same time presenting theology as a vital participant in any conversation about our understanding (and implicitly, our treatment) of nature. Unlike other approaches, however, modelling the domain of emplacement is a more hermeneutical enterprise, meaning that these disciplines are in dialogue with each other, contributing from their own spheres of expertise without one discipline holding a place of priority. By arguing for such a model of nature, we also supply expectations for theological discourse in the form of testability, which presents the possibility of furthering our understanding. Furthermore, a model of emplacement takes seriously the complexity of the human participation in the environment – especially given the realities of religious commitment and our scientific, technological worldview. In sum, what I have argued is that theological reflection on nature is best served through the modelling of our emplacement in place, as the way to provide a systematic and testable approach to nature.

What is left undone is a presentation of a specific model of nature for theological use. The presentation of such a model was not the purpose of this essay, but it is the logical next step. What would such a model look like? Foremost, it would take seriously the particular places of our experience, by describing a particular place or ecosystem. Through this, any theological model of nature identifies the ecological, aesthetic, utilitarian, and communal aspects of that place. It would also place these descriptions into conversation with our theological and scientific concepts, as well as our mediation of experience through interpretation. That is to say, insofar as it is a model, it would describe the structure in such a way as to be both interpretive and testable – we must interpret the given locale based on the

concepts of the categories we use, but these descriptions are open for verification. Importantly, this structure would seek to ascertain the depth of emplacement and place this depth in relation with a 'theological conjunctive'. We might posit that, on a more general level, the depth of emplacement is the unity of (a) the envelopment of the transcendent subject in the complexity and order of place/space, and the (b) participation and mutual transcendence of place and emplaced from each other in time.

For every place, the possibility of finding and delineating a depth is potentially present. This means that the general statement above would be tailored to the experienced realities of the particular place itself. This 'is/is not' understanding of the depth of emplacement might be seen to hold for emplacement *simpliciter*. Particular places exemplify this depth in different ways. The theological element that is presented by this basic structure is found in the statement that God appears in the unity of transcendence and immanence that coexist in the way that humans participate and discover order (in light of the perspectives of science, humanistic concerns, etc.) in the places of nature around them. Constructing a model along the lines described above provides the opportunity to expand and test this basic description, as well as to explore how values emerge from competing perspectives on nature.

In sum, this type of model offers a new way of opening the metaphorical 'Book of Nature' – taking seriously the theological tradition – while also affirming the importance of scientific knowledge of nature as primary for our contemporary understanding. By taking science, aesthetics, technology, and other disciplines into account, the role of a theology of nature becomes to seek the unity in difference of these dimensions. By using modelling as a method for seeking this unity in difference, theology can offer its voice to the important intellectual debate on the environment.

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Part Three

MORALITY AND THE MODIFICATION OF LIFE

8 The Value Lab: Deliberating Animal Values in the Animal Biotechology Debate

Frank Kupper

The development of animal biotechnology is shaped in the interaction between knowledge, technology, and the choices of the actors involved (Nowotny et al. 2001; Jasanoff 2005). The complexity of the biotechnological system makes its development an open-ended, inherently uncertain process. At the same time, it bumps into the limits of values and lifestyles. Democratic societies like the Netherlands have a diversity of views on what is 'right'. Regarding the execution of biotechnological procedures on animals, a plurality of perspectives has been present since its introduction in the Netherlands in the early 1980s. Different stories are told that each express a different vision on the animal, technology, and the relation between humans and animals. Furthermore, what is valued within these perspectives is expressed using different concepts and vocabularies. In other words, various ways of framing are present in the Dutch public debate. They each construct a different interpretation of the value of animals and thereby even of the animal itself. They constitute a typical way of thinking and talking about animals, referring to a distinctive framework of moral values considered to be important with respect to animals and the human-animal relationship. By this act of thinking and talking citizens are making the human-animal relationship meaningful to themselves and others.

This chapter introduces the interactive workshop methodology we have developed to articulate (possible) value conflicts in the Dutch public debate about animal biotechnology. We have dubbed this method the *value lab*. We focused on the deliberation of values regarding animals, although values about humans and about technology also play a role in this debate. Ultimately, this methodology is a first step to transform the public discus-

sion of animal biotechnology into a moral dialogue in which moral values are deliberated. The value lab reconstructs the various value frameworks that are in possible conflict with one another. These frameworks should not be regarded as mental entities, thematic wholes inside the heads of people. Their use is instrumental, in order to facilitate moral deliberation. The reconstructed value frameworks are means for further inquiry by providing structuring insight into the morally problematic dimensions of the pluralistic social context in which animal biotechnology develops.

An extensive methodological discussion of the value lab has been published elsewhere (Kupper 2007). Here we will discuss the major reasons for choosing a discursive method to explore value diversity as well as the most important elements of the method. The chapter ends with a short description of the moral value frameworks we reconstructed and some implications of these frameworks for animal biotechnology ethics.

The Dutch Public Debate: Talk about Intrinsic Value

The Dutch government has made a considerable effort to incorporate the concern for animals in their legislation on animal biotechnology. Since 1997, the Dutch government has recognized the 'intrinsic value' of animals as the central tenet of their regulatory policy. Another objective is to promote public deliberation of the biotechnological use of animals. Despite these efforts, values are not the central theme of discussion. Although they do of course operate in the background, they are not deliberated explicitly. This observation correlates with Van Well's analysis of the adjacent Dutch public debate on GM food. Also here, the organizing committee 'Biotechnology and food' reported that broader moral concerns were not discussed (van Well, this volume). Van Well analyses that even the committee itself excluded moral values from the discussion by conceptualizing ethics as a separate – and thereby empty – category of deliberations.

The debate on animal biotechnology has been largely framed as a legal discussion rather than a process of moral deliberation. One of the main reasons is the opacity of meaning of the concept 'intrinsic value'. Introduced by philosophers and legal experts to reinforce the moral position of the animal, the concept acquired various meanings in the public arena. Different social actors refer to different animal values when they use the concept of 'intrinsic value' to express their concerns about animals (De Cock Buning 1999). In the Dutch parliamentary debate on the ethical reg-

ulation of animal biotechnology it was noted that 'intrinsic value is not an issue: what we are concerned with here is its interpretation, which is different for everyone' (see Brom 1999). The floating meanings of the 'intrinsic value' concept hamper moral deliberation because they fail to provide a conceptual framework to structure public debate. Therefore, the only possible structure of the Dutch public debate is legal hegemony. It is the one available framework for social actors to meet for discussion (Paula 2001). Because violation of their ethical values can only be disputed within this juridical context, these actors find themselves repeatedly trapped in a 'ritual dance' against licensing procedures. The legal framework does not provide the appropriate grips to engage in an in-depth moral discussion about values. It does not contain the proper concepts and language to do so. As a result, the (possible) underlying value conflict is not articulated nor deliberated.

'Intrinsic value' served as the conceptual opposite of the instrumental value animals have for their human users (Musschenga 1994; Dol 1999). The concept seemed to address perfectly the moral concerns that go beyond the animal's health and welfare. Its monistic conceptual structure however, appears to limits the consideration of the relevant variety of relationships between humanity and non-human nature. If we want to engage in a meaningful social dialogue on animal biotechnology, applied animal ethics should take a different turn. In order to take the apparent value pluralism into account, we argue for a shift to 'contextualism', encouraging an open and experimental approach to moral inquiry, inspired by the philosophical pragmatism of John Dewey (see the final section of this chapter). A first step in this process of moral inquiry would be the identification and articulation of the (possible) value conflicts between various social actors. As Loobuyck indicates in this volume, the negotiation of positions and the exchange of perspectives can only take place when the identity of the other has become clear.

Social Interaction and In-Depth Understanding

Involving the public in policy-making about animal biotechnology implies listening to what citizens have to say. We were interested in the diversity of value frameworks. Therefore, we chose to look at the widest range of interested publics and to discuss the broader moral concerns. The participants in this study were explicitly addressed as citizens, members of the Dutch democratic society in which animal biotechnology is developing.

One of the assumptions of this research project was the idea that unprofessionalized citizens did indeed have an important contribution to make in the moral deliberation of animal biotechnology, since the discussion is about values that we all exhibit.

In cross-national studies of European consumer attitudes towards genetically modified food, it was observed that an individual's opinions and beliefs about animal biotechnology are deeply embedded in more general attitude domains like the attitude towards nature and the attitude towards technology (Bredahl 1999; Bredahl 2001). Also, values, beliefs, and ideals are among other factors dependent on their context of expression (Potter 1996). From a discourse analytical perspective, the meaning of value concepts is seen as emerging in the process of social interaction (Potter & Wetherell 1987; Burningham 1995). When people talk about their perceptions of animals they will do so in highly complex ways (Waterton & Wynne 1999) have argued that values, beliefs and ideals, that is, the frameworks we set out to explore, are generally expressed in relation to a relevant social context and also as a process of negotiation of trust. They are actively negotiated and constructed during the course of interaction with others. Therefore, according to these authors, research into the meaning structure of values, beliefs and ideals needs a more reflexive research framework than is offered by surveys or individual interviews. Adopting this perspective, we felt that the value frameworks underlying public perceptions of animal biotechnology in the Netherlands can at best be investigated by a close examination of the social interaction process through which the meaning of values is constructed.

So we set out to create a setting that enabled social interaction as well as in-depth understanding. In recent years, the focus group interview has been recognized as a powerful site of social interaction through which meaning and understanding are co-constructed (Madriz 2000). Focus groups are distinguished from ordinary group interviews by the explicit recognition of group interaction as a crucial part of the research process. The group is 'focused' in that it involves some kind of collective activity (Barbour & Kitzinger 1999). They are also 'focused' in the sense that a selective set of individuals discusses a specific topic from their own experience (Morgan 1997). Usually, they are set up as once-only meetings that take up to three hours. The recommended number of participants varies between five to twelve participants (Greenbaum 1998). Data derived from focus group discussions relies to a large extent on the interactions between participants themselves (Barbour & Kitzinger 1999). As Kitzinger puts it, the 'group work ensures that priority is given to the respondents'

hierarchy of importance, *their* language and concepts, *their* frameworks for understanding the world' (Kitzinger 1994).

The objective of this research project was to articulate the (possible) underlying value conflicts in the public debate on animal biotechnology. This entails listening to what citizens themselves have to say. So, in line with the experiences with focus groups we organized small group discussions in order to reconstruct moral frameworks. This way the participants of the value lab acted as co-researchers, reconstructing their own frames of reference while reflecting and deliberating on animals with others. These frameworks involve the concepts, beliefs and ideals about animals that people personally value. Our qualitative research design aimed at understanding the various meanings participants themselves assign to their own life-worlds and experiences. Following a grounded theory approach we aimed at the inductive development of theoretical concepts from the ways our participants themselves order their thoughts and experiences (Glaser & Strauss 1967).

Designing the Value Lab Method

The objective of the value lab method was the exploration of the width and depth of different ways in which citizens in the Netherlands frame the value of animals. In order to facilitate a fruitful discussion of moral values we had to take several steps. First, we had to establish conditions that created a conversational context in which participants would feel at ease and deeper values could be discussed freely. Then, the selection and grouping of participants had to preserve the fruitful conversational context and warrant inclusion of the diversity of viewpoints. In the actual workshop design we strived for a balance between free-floating discussion and structured exploration. The final step in the value lab methodology was the systematic analysis of the discussion products. All together, the value lab is an interactive methodology merging social interaction and in-depth exploration.

Creating a Conversational Context

In this research process we aimed at encompassing diversity as well as *in-depth* exploration of ideas about animals. In order to enable this process, it was of great importance that a fruitful conversational context was

created. According to the literature on public participation mechanisms, such a conversational context is characterized by an atmosphere of mutual respect and openness, and by equal opportunity for every participant (Abelson et al. 2003; Rowe & Frewer 2000; Webler & Tuler 2000; Caron-Flinterman 2006). Mutual respect and openness require a safe and relaxed environment in which participants would feel at ease and open to freely express their thoughts and beliefs. If personal values were to be shared, the conversation environment has to be trustworthy and non-threatening (Greenbaum 2000). Equal opportunity entails a fair deliberative process in the sense that it provides every participant the opportunity to put forward her position and to reflect on the position of others.

These conditions were met by the implementation of two guiding principles. First, we strived for homogeneity *within* the groups and heterogeneity *between* the groups. In this study, homogeneity meant that the participants joining in a particular focus group meeting more or less shared the same worldview. Our results show that working with homogeneous groups indeed showed a positive effect on the group process, creating group adhesion and a strong sense of solidarity. Generally, participants indicated they felt free to express their thoughts. Furthermore, they mentioned that it felt good to discuss these matters among like-minded people. The mixed groups we also organized showed less of the sense of solidarity and spent more time on convincing instead of clarifying one another. Because of the waste of time and energy, mixed groups had a tendency to become superficial, compared to the homogeneous groups.

The second principle entailed working with structured exercises during the focus group sessions. There is always a balance between structure and freedom. Although a free floating discussion certainly helps in the creative construction of ideas, sometimes a directive structure is needed to allow in-depth examination of what has come forward or to prevent dominant participants to claim superiority over other participants. One of the participants of the value lab discussions put it like this: '*I appreciated the idea that the exercises granted everybody's opinion equal attention.*' Another one: '*There was a fair division of attention.*'

Our experience with the value lab discussions demonstrates that the use of structured exercises contributed to an equal distribution of attention during the discussion.

Selecting and Grouping the Participants

Representativeness is regarded as one of the most important criteria for evaluating the effectiveness of participatory mechanisms (Rowe & Frewer 2000; Abelson et al. 2003). In our study, we were explicitly interested in cognitive representation, inclusion of the qualitative diversity of views on animals and the human-animal relationship.

Range of viewpoints	Group	Thematic grouping parameters
	hg1	industrial farming
	hg2	animal research in the laboratory
	hg3	pet breeding & retail/ fishing sports/ zoo workers
	hg4	farming/ countryside/ hunting/ foresting/ veterinary medicine
	hg5	Catholic and Protestant Christianity
	hg6	Islam
	hg7	organic farming/ nature conservation/ nature protection/ nature recreation/ vegetarianism/ humanism
	hg8	pet owners/ assistance animals/ animal shelter/ animal protection
	hg9	Buddhist/ Hindu/ Baha'i religions
	hg10	biodynamic farming/ veganism, deep ecology, anthroposophy, nature religion
	mg1-5	random cross-sections of society

Table 1   Selection and grouping of discussion group participants for a range of viewpoints. hg: homogeneous group; mg: mixed group.

As was mentioned, we aimed for homogeneity within the groups and heterogeneity between the groups to facilitate open and in-depth exploration of ideas. To achieve these aims, we have made use of various criteria to establish groups of congenial minds. We grouped on profession, membership of social organizations and anticipated worldview.

Using a cognitive representation sampling strategy probably entails missing out on some socio-demographic categories. In line with Fishkin (1995), this is only a problem when these groups would provide new or not yet described ideas about animals. Fishkin has argued that if not every person, at least every view must be represented.

We expanded our research population to groups of a specific religion or philosophy of life, because their voices are often considered unheard in the public debate about technology issues, a phenomenon also denoted by the contributions to this volume by Van Well (with respect to the GM food debate) and Loobuyck (with respect to political decision making). A remarkable result of the value lab discussions however, is that the Christian and Islamic discussion groups appeared not to be homogeneous with respect to their ideas about animals, despite the fact that they shared their religion. Apparently, religion was not the strongest determinant of animal values in these groups. On the level of process, these groups did show the same pattern as the other homogeneous groups. There were no observations that this heterogeneity disturbed group interaction.

Qualitative research literature recommends to conduct a series of discussion groups, while simultaneously monitoring the development of a range of issues to see whether new issues come up or the development of themes and categories becomes 'saturated' (Krueger 1994; Sim 1998). We started out with the two groups we expected to construct the two outer extremes of value patterns (see table 1: hg1 and hg10). The homogeneous groups we conducted subsequently showed no transgressions of these extremes. Also the mixed group discussions, which were cross-sections of society, did not show additional value patterns. The range of value categories observed in the homogeneous groups has been produced in the mixed group discussions as well. These results indicate that the selection strategy utilized in this study encompassed the width of ways in which Dutch citizens frame the value of animals.

The Discussion Workshop

The value lab design was standardized for all groups, and was semi-structured. Each group discussion was guided by a facilitator. The facilitator was accompanied by a monitor, who observed the group dynamics and, roughly, form and content of the discussion. Also, the monitor assisted the facilitator in carrying out the assignments. The overall structure of

the programme was designed to enable in-depth exploration of animal values in a relaxed and trustworthy environment where participants can easily share their thoughts and beliefs.

The collective activity of the focus group consisted of a step-by-step circling in on the variety and richness of ideas. The focus group programme therefore moved from intuitions to conceptualized values through the repetitive use of structuring exercises.

A session started out with sharing and collecting the participants' direct intuitions and associations about animals. The next step was to articulate the stories behind the associations. The facilitator therefore repeatedly asked 'why questions' in order to move from intuitions towards value concepts and the articulation of contextual stories. The next step was to systematize the value concepts by clustering them in value categories and ranking them in order of importance. Then, the group focused on a specific category and the process of association, articulation and systematization recommenced. Working this programme, the participants constructed an interrelated network of concepts, beliefs and ideals they particularly valued about animals. The facilitator and monitor continually visualized the outcomes of discussions and exercises on flip-over sheets to make sure the group was able to continue working on the material that had come up in their interaction. Furthermore, the workshop design made sure that value frameworks were constructed by the groups themselves, using their own language and concepts.

Mixed Group Sessions

As was mentioned above, three of the mixed groups worked the same programme as the homogeneous groups did. For the other two mixed groups a different setup was chosen. In the standard programme, discussed above, the participants started at the level of intuitive association and slowly moved towards making moral intuitions explicit in a group-specific conceptualization of the intrinsic value of animals. The two remaining mixed groups started directly with an introduction of the intrinsic value concept and its role in the public debate. Subsequently, these groups completed the same exercises but now from the perspective of the intrinsic value concept. We wanted to find out what meaning the participants would attribute to this concept and whether they would use it at all if they were to give their ideas and opinions about animals.

The Reconstruction of Value Frameworks

The value lab discussions yielded a collection of group stories encompassing the variety and richness of ideas about animals in the Netherlands. The next step in the research process was to reconstruct the value frameworks in which the group stories were grounded. First of all, during the group discussions, the participants themselves worked on the articulation and structuring of their own beliefs and ideas. Second, the group stories were analysed by the researchers using a grounded theory approach (Glaser & Strauss 1967). A basic qualitative coding system was developed in an iterative process in a continuous exchange between raw data and the analytical and theoretical ideas researchers developed during the study (Strauss & Corbin 1998; Baarda 2005).

There are three different levels of interpretation in the coding system: value descriptions, value concepts, and value categories. *Value descriptions* are phrased in the participants' own language and correspond to the explanation that was given by the participants to convey why *they* felt a particular animal value was important. It was crucial to preserve this language because our investigation specifically aimed at understanding the language and concepts citizens themselves use to express their thoughts.

Value concepts refer to the values underlying the expressions of the participants when they talked about what they appreciated in the animal. *Value categories* comprise specific sets of value concepts, linking them through a common feature they share. The systematic coding procedures produced relationships between various value concepts and categories. Through this process of categorization and linkage a complex network of interconnected value concepts was reconstructed. This activity of coding, categorizing and linkage clarified which value concepts were used in the participant stories. During the sessions participants already ranked the priority of value concepts. Furthermore, the frequency by which a particular concept was expressed was taken as a measure for the relative weight of value concepts. Comparing concept maps and concept frequencies showed to what extend groups exhibited a mutual coherence. Of course, each of the focus groups went through a unique process of interaction, producing singular differences in how value concepts are framed and how often they are expressed. However, in line with Kitzinger (1994), using the same structured exercises for every group made it possible to compare their stories. Iterative cycles of interpretation by independent interpreters warranted the shared interpretative validity of research pro-

cess and products (Maxwell 1992) and established the reconstruction of four distinctive value frameworks.

Four Ways to Frame the Value of Animals

Each of the frameworks constitutes a typical way of valuating, thinking and talking about animals. It comprises a descriptive sense (a vision of what an animal is) and a normative sense (a vision of why animals are important and how people should treat animals). The frameworks assemble a set of value categories concerning specific elements of the image of the animal itself or the human-animal relationship. The value categories contain a specific subset of animal values. These values are broadly defined as those features of the animal or the human-animal relationship that the participants of the value lab cared about, that mattered to them. The four frameworks are named after their central value concept: Use, Relation, Balance, and Source.

We consider the value frameworks produced in the value lab to be deliberated constructions of the value of animals and the human-animal relationship. In line with a discourse analytical perspective (Frouws 1998; Layder 1997) we regard those constructions as social representations. Whenever actors like farmers, scientists or other kind of citizens make sense of the issue of animal use, articulate their ideas, they selectively use a reservoir of social representations (i.e. value concepts and categories.) Whether a particular representation is used depends on the ideas and interests of the actor as well as on the changing context of discussion. Probably, for everyone a specific pattern is predominant or functions as a default mode. Other social contexts may however invoke a use of language and concepts that belongs to one of the other patterns.

Four Perspectives

The four frameworks put their emphasis on different levels of their respective worldviews. We have distinguished the level of the individual animal, the species, the ecosystem and the greater whole. Table 2 on page 170 shows the resulting perspectives for these four frameworks. The emphasized level colours the entire perspective on the animal and its relationships to humans and the surrounding world.

frame perspective	Use	Relation	Balance	Source
	I	I-you	i-WE	i-THOU
animal	relation experience	relation experience functionality individuality		individuality being
species	bio-capa-cities use		functionality	
ecosystem			life naturalness	
whole			system	naturalness system

(level)

Table 2 Four different perspectives on the animal. For each frame, the important value concepts are depicted at the level they address. The arrows indicate that for each of the frames the entire meaning of the animal is perceived from a certain level.

The Use framework draws on an I-perspective. The interests of humans shape the meaning that is attributed to the animal itself. Furthermore, the individual animal is approached as a manifestation of its species. Not the individual but the general is what is perceived and appreciated.

On the contrary, the Relation framework first and foremost values the individual qualities of the animal. The perception of an animal as an individual being colours the entire Relation view. Furthermore, the I-YOU perspective focuses on the relationship between humans and animals.

The Balance framework exhibits an I-WE perspective, focusing on the role of individual animals and species in the ecosystem they inhabit. A balance is sought between human and animal needs.

Also the Source framework holds a system perspective, the I-THOU perspective. However, also the individuality of the animal is recognized. The valuation of the system here acquires a spiritual dimension. The individuality of every animal is perceived as a manifestation of the supremacy of the whole of which both humans and animals are a part.

Different Interpretations of Intrinsic Value

The concept of intrinsic value acquires a different position and meaning in each of the four frameworks described above. Of course, aspects of the different interpretations also overlap. Even when two frameworks refer to the same aspect however, differences remain in how this aspect is precisely understood. Furthermore, the different perspectives on the animal and its relationships to humans and the world colour the understanding of each aspect of a particular intrinsic value interpretation.

In the Use framework interpretation the intrinsic value of animals particularly as the recognition of the animal as a sentient being. The concepts of health and welfare are therefore valued as the most important (and relevant) interests of the animal itself. The capacity for species-specific behaviour is valued in so far as it contributes to the animal's welfare. The Relation framework shares the recognition of the animal's health and welfare as an important element of the animal's intrinsic value. Additionally, the animal's individual quality is seen as a part of the animal's intrinsic value. The animal is appreciated as an independent companion in the human-animal relationship. This idea contributes to the quality of this relationship. Due to the human-centeredness of the perspectives of both the Use and Relation frameworks, some elements of the animal's intrinsic value are simultaneously appreciated for their instrumental value. The Use framework for example perceives the animal's species-specific character and behaviour as something that belongs to the animal but also gives humans the opportunity to use animals in order to fulfil human needs. The Relation framework also appreciates this character and behaviour in an aesthetic sense, referring to the joy it grants the human spectator.

The Balance framework interpretation of intrinsic value primarily emphasizes the animal's independent role and position as a co-inhabitant of the greater whole of 'system earth'. Further constituents of the animal's intrinsic value are the appreciation of the animal as a subject of life, with its own subsequent needs and interests, and the animal's naturalness, grounded in the concepts of species-specific character and behaviour but particularly in the recognition of the animal as a part of a natural environment. A similar 'system' perspective can be observed in the language and concepts of the Source framework. However, there is a more spiritual dimension to it. The greater whole of which man and animal are part is conceived as incomprehensible to us human beings. The interconnectedness of animals with all other things is perceived as one of the most important

elements of the animal's intrinsic value. The other element is the animal's individuality. Together, interconnectedness and individuality are viewed as a manifestation of the animal's purpose.

Implications for Animal Biotechnology Ethics

Each of the four reconstructed ways of framing conveys its own narrative of the value of animals and their relationships to human beings and the surrounding world. These narratives are grounded in different frameworks of animal values. The diversity of values between the four frameworks provides a strong validation of moral pluralism in the reflection on animals in the Netherlands. The value diversity observed in this study includes both instrumental values, like the animal's functionality, and non-instrumental values, like the animal's being a subject of life. It is important to note that not only between frameworks but also within each one a mixture of instrumental and non-instrumental values is expressed. Like Smith (2003) noted with respect to environmental politics, both individuals and groups simultaneously appreciate values of nonhuman nature that are difficult to reconcile and pull them in contradictory directions. The ethical monism of intrinsic value theory is proposed to expel this uncertainty and settle the conflicts. In the meantime, it needlessly limits the broad range of interactions between humans and animals and thereby misrepresents the diversity of moral experiences and values. The dichotomy of intrinsic vs. instrumental value construes participants in the moral debate as adversaries on either side of a dilemma. This results in a mere simplification of the morally problematic context. Minteer and Manning (1999) have argued that any form of rigid monistic ethics runs the risk of jeopardizing the democratic tolerance of public ethical pluralism. Above, we already mentioned that the current practice of animal biotechnology ethical regulation in the Netherlands indeed does not provide the framework to incorporate the diversity of values into ethical decision making.

With the undeniable complex and uncertain character of animal biotechnology in mind, we believe a more pragmatic and pluralistic approach to animal biotechnology ethics would be better equipped to engage in moral deliberation of the wide range of moral concerns about the biotechnological use of animals. Here we join up with the fairly recent pragmatic turn in environmental ethics (Light & Katz 1996; Minteer & Manning 1999; Keulartz et al. 2003). These writers are inspired by the school of philosophical pragmatism, originating from the work of Charles Sanders

Peirce, William James, and John Dewey in the late nineteenth and early twentieth century. Mainly the work of John Dewey, offers some fruitful options to deal with the flaws of ethical monism and intrinsic value theory. In Dewey's view the world is a continuous and contingent process of change. His philosophical pragmatism therefore is anti-foundational. In an ever-changing world, the response to a morally problematic situation cannot be justified by some external and absolute criterion. Creative-intelligent inquiry into the context of the morally problematic situation is what is needed. Thus, Dewey aims at an open, flexible and experimental approach to moral problems. Like Minteer (2001) noted, Dewey's philosophical project demonstrates a strong faith in the ability of human experience to produce from within itself the justification of values and beliefs. Moral deliberation in this view ultimately rests on the potential of individuals to collectively engage in the creative-intelligent activity of moral inquiry. We believe incorporating value pluralism through the activity of public debate and criticism is central to the justification of any animal biotechnology policy in a democratic society like the Netherlands.

Application of the value lab method produced in-depth understandings of the various ways in which Dutch citizens frame the value of animals and the intrinsic value in particular. Our results show that in each of the value frameworks the concept of intrinsic value acquires a different place and function. The Dutch Ministry of Agriculture, responsible for animal biotechnology policy in the Netherlands, operationalized the concept of intrinsic value as the health, well-being, and integrity of the animal. Integrity is further operationalized in three aspects: the wholeness and intactness, the capacity for species-specific behaviour and self-sustainment. All of the framings produced in this study are different from the legislative framing of intrinsic value used by the government. The concept of integrity does not play a role in the Use and Relation frameworks. It is not perceived to be a meaningful concept in the evaluation of animal biotechnology practices. At the same time, the Relation framework expresses valuation of the individuality and uniqueness of animals, concepts not reflected in the operational definition. The idea that animals are taking part in a greater whole, important concepts in the Balance and Source framework, is also not reflected in the definition used by the government. In further public deliberations about animal biotechnology, this legal definition will therefore remain subject to critique. Adopting a different definition however will not be likely to change this.

It is strongly advisable to actively incorporate this insight in devising and facilitating the public debate on animal biotechnology. There will

never be one absolute truth about the intrinsic value of animals. Given the pluralistic reality of the Dutch public debate, it would be better to create a platform for democratic communities to deliberate the implications of various interpretations then to strive for justification from a detached, external perspective.

As Walzer (1987) once put it: 'It is better to tell stories, even though there is no definitive and best story'. According to Beekman and Brom (2007) modern societies are not used to the discussion of these kind of ethical issues. They argue that ethics as a platform for value debates is therefore necessary in pluralist democracies. In line with the ideas of deliberative democracy (see for example Dryzek 2000), it would be a platform for citizens from all directions and orientations to meet for discussion. Like Crapels is saying in this volume, quoting Nowotny et al. (2001), a real dialogue about biotechnology is a way for society to speak back to science in the production of contextualized, robust knowledge. Benhabib (1996) writes that all citizens must feel free to bring up any moral argument to such a discussion. In his contribution to this volume, Loobuyck too states that pluralism is 'the very essence of the right to exist of our democracy'. But, he also rightfully acknowledges that it requires a deliberative attitude. Like Dewey advocated, it requires the critical appraisal of the values and beliefs of oneself and others. This would be the role of biotechnology ethics. Ethics as a platform for value debates should facilitate such appraisal and criticism. It is the task of animal biotechnology ethics to change a dogmatic clash of belief systems into a critical process of moral inquiry and open democratic deliberation. To fulfil this role, it needs the development of ethical tools, instruments to structure a collective process of moral inquiry. The value lab method we have discussed here can be understood as such an ethical tool. The frameworks produced in the value labs are heuristic tools for understanding the relationship between different values and positions in the public debate. They are instruments that provide a structuring insight into the morally problematic dimensions of the pluralistic social context in which animal biotechnology develops. Development and trial of the value lab was the first phase of a larger project, commissioned by the Dutch Ministry of Agriculture. The second phase of the project focused on the articulation of (possible) value conflicts by organizing dialogue sessions in which participants using different frames had to make decisions on biotechnology cases (in preparation). The project aims to contribute to integrative and context-sensitive policy-making on animal biotechnology. Ultimately, we hope to contribute to the development of a pragmatic and pluralistic approach to animal biotechnology ethics.

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9 'Not by Bread Alone' – Religion in the Dutch Public Debate on GM Food

Michiel van Well

Introduction

Religion plays a role in every debate on innovative food technologies. These debates cannot be understood well without paying attention to the religious aspects of these debates. I will demonstrate this with the help of the work of the anthropologist Mary Douglas and by analysing the Dutch public debate on GM food as organized by the Terlouw Committee in 2001.

Food and Religion

Food is a central theme in almost every religion, and food and religion have been closely intertwined for ages. There are many religious stories and references in which food plays an essential role. Food has been a religiously loaded theme in different ages and places. In the Bible, more specifically in the Torah, the first reference to food is made immediately after the stories of creation, in Genesis 2: 16-17; in the words of the King James version: 'And the LORD God commanded the man, saying, Of every tree of the garden thou mayest freely eat: But of the tree of the knowledge of good and evil, thou shalt not eat of it: for in the day that thou eatest thereof thou shalt surely die.' In the Qur'an (2:35) a similar story is told and also in Hinduism there are numerous stories in which food plays a central role. But not only in words, also in religious practices, rituals, and experiences food plays an essential role, in fasting, feasting, and offering. Connected to those stories and practices many religions have dietary rules and purity laws describing which food is pure and which is impure and therefore not to be eaten (or to be sacrificed).

That practically every religion relates to food does not necessarily imply that religion plays a role in all debates on food. However, a closer look at especially the religious dietary rules and purity laws gives at least theoretical reasons to conclude that religion plays a role in every debate on innovative food technologies.

Dietary rules and purity laws are a good entrance to see the intricate connections between food technology and religion. For modern people, dietary rules and purity laws at first sight seem to have an obscure or arbitrary nature. Many theologians and scholars of religion have tried to come up with a clear interpretation of the purity laws of the Israelites. Many interpreters based their interpretations on motives of hygiene, blood, death, and creation order (Boersema 2001). The anthropologist Mary Douglas gives another interpretation of the purity laws that is different from those her predecessors. She divides those former interpretations into two categories. The first she coins 'medical materialism'. In this approach it is implied that if we only knew all the circumstances, we would find a rational basis of primitive ritual amply justified. Douglas denies this line of reasoning a she states:

> Even if some of Moses' dietary rules were hygienically beneficial, it is a pity to treat him as an enlightened public health administrator, rather than as a spiritual leader. (Douglas 2002, 37).

As to the second and opposite view in which primitive ritual has nothing whatever in common with our ideas of cleanness, this is by Douglas deployed as equally harmful to the understanding of ritual:

> One cannot state that our modern practises are solidly based on hygiene, and theirs are symbolic: we kill germs, they ward off spirits (Douglas 2002, 40).

Yet, for Douglas the resemblance between some of their symbolic rites and our hygiene is sometimes uncannily close. For Douglas, purity and danger are closely related to classification schemes that order the world and are grounded in religion. As I will show in this article, this gives a new entry to modern debates on high tech food as GM food. Therefore an analysis will be made of the Dutch public debate on GM food caled 'Eten en genen', which was organized by the temporary governmental committee 'Biotechnologie en voeding' chaired by Jan Terlouw in 2001.

Introducing Monsters

The debate 'Eten en genen' was not an isolated event; it was part of broader developments in the field of biotechnology and the public debates that were connected to them. In the 1970s, recombinant DNA technology was developed. With this technology it became possible to change an organism at a genetic level and by this it became possible to steer its phenotypical appearance and functions. It also became possible to implant human genes in micro-organisms which therewith produced human insulin. The technology was further developed and in 1983 the first plant with recombinant DNA was constructed. At that time the technique of DNA recombination was known, both in science and in society, as genetic manipulation.

This development opened up a broad range of possibilities for new food products and food production methods. Since then, biotechnology has been booming. New research fields appeared, new companies opened up and new industries have developed. In 1995 the first soy and tomatoes with recombinant DNA were presented for sale. The tomatoes and soy were made herbicide resistant which was expected to give production profits. In 1996 the first ships loaded with recombinant soy tried to enter the Netherlands via the Rotterdam harbour. Greenpeace campaigned strongly against harbouring the ships and especially against unloading the recombinant soy.

In the media a huge debate developed on the topic of genetically manipulated food. The debates were fierce and had some name calling in them. Proponents of the recombinant DNA technology started to use the term *genetic modification* instead of the till then common term genetic manipulation. This made the opponents call for and defend the name *genetic manipulation*, which from that moment on had a more negative connotation. In this essay I will use the inconclusive abbreviation GM. The names and their connotations did not end the debates. They just started a new phase in the debate. The Dutch debate on biotechnological food has shown to be an ongoing story ever since – a story in which names like 'Frankenstein food' came up and got much attention, but too little reflection.

In the media the name 'Frankenstein food' was frequently used and debated. In one way or another it gave expression to severe feelings about GM food which were hard to express in another way. With the name 'Frankenstein food', GM food acquires the connotation of being an abomination, a monster. In this chapter I will argue that it is not a bad name for GM food, without implying that GM food should or should not be eradicated. There are other ways to treat a man-made monster.

Douglas on Dirt

To find out why it might be appropriate to call GM food a monster, let us delve into the work of Mary Douglas on purity. Douglas explains that a precise reading of Leviticus shows a strict classification scheme behind the purity rules and dietary laws. This classification scheme was used by the old Israelites to order the diversity of creation. Distinctions were made between land animals, water animals and air animals with their separate characteristics and their own way of moving. The Israelites saw it as their duty to live to this order. Animals that could not be categorized because they had characteristics of different categories were considered an abomination. The pig for instance, was considered impure because it was the only animal that did not ruminate but does move on four legs without cloven hoofs, and therefore did not fall into any category of the creation order. Impurity is a breach of ruling classifications (Douglas 2002).

The object of Douglas' comparative religion is order. The way people order their world by classification is a central theme in the work of Mary Douglas. Interestingly enough, she does approach this theme via disorder and chaos. What is considered as impure or dirty gives, according to Douglas, insight into ideas about what is clean, pure, and ordered (Reis 1996). Or as she states it herself:

> Reflection on dirt involves reflection on the relation of order to disorder, being to non-being, form to formlessness, and life to death. Wherever ideas of dirt are highly structured, their analysis discloses a play upon such profound themes. This is why an understanding of rules of purity is a sound entry to comparative religion (Douglas 2002, 7).

In daily life dirt or impurity are mostly seen as properties of goods. Douglas however relates them to actions in a specific context. Shoes are not intrinsically dirty; it is dirty to put shoes on the dining table. Impurity and dirt is that what is situated in the wrong place of the classification scheme. Or as Douglas summarizes it, dirt and impurity are 'matter out of place'. The boundaries of the order in which humans, animals, and goods all have their place, are exceeded. This place does not necessarily mean an actual location; it mostly refers to a cultural or material order (Douglas 2002).

Following Durkheim it can be stated that religions give classification and order an objective or God-given status. Essential therefore is the concept of the holy which has an untouchable and autonomous character and conceals human aspects of the classifications. Religion unites the

different classifications used by a group (Durkheim 1995). Durkheim applies this view only to non-modern societies. Durkheim was primarily interested in the question how modernity was different from primitive or pre-modern societies. Douglas applies Durkheim's approach also on modern societies and her central question is therefore no longer about the difference but about the similarities between societies. Douglas denies the conventional idea that traditional ideas about impurity are the result of ignorance, superstition and religious imagination, while modern ideas about hygiene would be the result of scientific knowledge and true insight into nature. For Douglas both traditional and modern forms of impurity are the result of the same cultural mechanism. The central notion of this mechanism is that impurity is 'matter out of place'. It is the result of an unsuccessful classification. Impure are objects that do not fit in the cognitive classification scheme. And since the activity of classification is a human universal, which implies unclassifiables, those cannot be eradicated. Dirt, impurity and as we will see 'monsters' are part of every culture and of everyday life.

The Dutch philosopher Martijntje Smits uses Douglas' ideas on religion, classification, and purity to understand responses on new technologies (Smits 2002). Like dirt, impure animals, or food, new technology can be unclassifiable 'matter out of place'. Technologies are innovative, not only in a technological sense but also on a cultural level. With reproductive technologies for example, new ways to become pregnant are introduced, but with it also embryos 'out of place'. Embryos are now held outside the womb inside a test tube. Technological innovation can challenge existing ideas about ourselves, our environment and our relations. Smits considers these new and unclassifiable technologies and their products as monsters. Monsters are ambiguous, they combine elements that are or at least were not combinable (like *bio-technology* or *in vitro fertilization*) and therefore bring both *tremendum et fascinans* – fear and fascination. Monsters may not be classifiable, that does not mean they are considered to have a bad nature. Monsters can be appointed both as sacred and as a taboo. Monsters not only represent the destructive force in the existing order, they can also be taken as a creative shapelessness with the force of creation (Smits 2002). For the Lele (a Congolese tribe), the holy pangolin (scaly anteater) is a contradiction of all categories used. It has scales like a fish, climbs trees, looks like a lizard and is a mammal. It is apparently highly impure, but practically most sacred. The pangolin is prepared and eaten by initiates and considered as a source of fertility. Monsters are ambiguous, but that does not necessarily mean they cannot be attractive.

Monsters!

In what ways is GM food a monster? In the debate, a recurring theme was if GM was fundamentally different from classical ways to improve the species, or if GM could be considered to be just a next step in a longer tradition of improvement. With existing classifications there is no straightforward answer to that question. GM food cannot easily be categorized in an existing classification, it is matter out of place or, due to its innovative character, matter without a place. It transcends boundaries that were taken for granted until then.

In GM qualities of different species are exchanged. In response to that, people bring up worries about contamination. For instance in biological agriculture there are 'especially many worries about "contamination" by blowing over of pollen from plants that are genetically modified' (Terlouw 2002). Others apply great value to the preservation of original species and are worried about irreversible changes. GM food does make an appeal on ideas of naturalness and does not fit into the existing 'natural' categories used by people in the debate (Terlouw 2002).

Besides the 'unnatural' character, GM food also brings up a lot of questions about the risks, dangers and uncertainties of this type of food. In June 2001 the Terlouw Committee asked the public by advertisements in newspapers which aspects should be part of the public debate. Most brought up the matter of safety for humans and the environment (Terlouw 2002).

Purity and danger, risk and safety are directly brought up when GM food is debated. I would state that these themes illustrate that GM food has a monstrous character. We cannot classify GM food in existing categories. To a lot of people GM food is an ambiguous product, which brings in both unprecedented options and changes but also unknown risk and dangers. GM food can be fascinating but also fearsome.

One can reasonably state that GM food is a monster, at least in the way Smits uses the term. Frankenstein food is therefore not a bad name for GM food. Especially when we consider that the problem of Mary Shelley's Frankenstein was not that he created a monster, but that he did not care enough for it (Bijker 1995). With that, the question that comes to the fore is: how does one relate to this monster?

Organizing Open Debate

In 1999 a resolution was passed in which A.M.A. Van Ardenne-van der Hoeven and other members of the Dutch Parliament asked to organize a public debate on GM food. The second cabinet of Prime Minister Kok incorporated the request in the *Integrale Nota Biotechnologie* (Ministry of VROM 2000). Minister of Agriculture, Nature, and Food Safety, Laurens Jan Brinkhorst of the political party D'66, carried out the resolution on behalf of the cabinet.

The motive for the debate was formulated by the minister of Agriculture, Nature and Food Safety in a letter to the parliament (all translations from Dutch are by the present author):

> The cabinet sees modern biotechnology as a key technology, which should be used in a responsible and careful way. The introduction of genetically modified corn and soy a few years ago ... has given rise to discussion in society. It is expected that new uses of modern biotechnology in the future will lead to recognizable advantages for consumers, such as health advantages. The process of opinion making about the formerly mentioned uses has till now not taken place in a structured manner...Much of these discussions are hardly accessible to the broader public. (Brinkhorst 2001)

The outspoken position on biotechnology as a key technology taken by the cabinet does structure the agenda for the debate. The goals of the debate as formulated by minister Brinkhorst are informative on this matter. The cabinet sees the goal of the debate as twofold:

> Primary goal for the public debate (is) ... to make clear the conditions under which biotechnology for food is acceptable by the public. This does not mean the cabinet aims to stimulate the acceptance of the use of modern biotechnology in food in society via the debate. To accentuate this, the organization of the debate is distanced from the government. This stimulates independent information dissemination and facilitates the public debate in an objective manner. The public debate about biotechnology and food aims primarily to spread information under a public as broad as possible. (Brinkhorst 2001)

The cabinet denies aiming at acceptance of biotechnology with the organizational argument of placing the committee at a distance from the

government. However, the leading question for the debate clearly antici-
pates the acceptance of modern biotechnology by the public. Only when
acceptance is presumed, does the question regarding under which condi-
tions biotechnology is acceptable for the public make any sense. This does
not mean that a free exchange of ideas and opinions is not a value for the
cabinet as it states a bit further in the memo:

> The first goal of the public debate is to disseminate information under
> a public as broad as possible. The second goal of the debate is to give
> the public and other involved parties the opportunity, by structured
> discussion, to exchange and formulate opinions and standpoints about
> the question under which conditions the use of modern biotechnology
> in food is acceptable to them. (Brinkhorst 2001)

Although the debate should be open to public and other parties involved,
the agenda is directly limited to the conditions under which the use of
modern biotechnology in food is acceptable to them. The goals of the
debate seem to be halted between two options: an open debate and or a
campaign for this key technology.

Minister Brinkhorst installed the Committee for Biotechnology and
Food under the chair of former minister of Economic Affairs, Jan Terlouw.
Both Brinkhorst and Terlouw are members of D'66, which characterizes
itself as a progressive-liberal party. It is a pragmatic party which has little
affinity with traditional political ideologies or religion. It purports to build
on rationality and aims at governmental reform. Together with the liberal
party (VVD) and the socialist party (PvdA) they formed a so-called 'pur-
ple' cabinet, the first cabinet since 1918 in the Netherlands which reigned
without the Christian democrat party (CDA) or its predecessors. In 2001,
this purple coalition began its second term. It was, as they characterized
themselves, pragmatic rather than ideological.

In this political constellation the Committee is installed and after instal-
lation, the Committee closely stuck to the formulated assignment. They
used both qualitative and quantitative methods to get insight into public
opinions and arguments, organized several debates and offered help to
other organizations who would do the same. From their report it is clear
the Committee put a lot of work in informing people about the debate and
was successful in that. But it became also clear that the Committee had
difficulties to get and keep organizations involved in the debate.

Managing Monsters: Monster Adaption by the Committee

Given the presumption that biotechnology is a key technology, which is here to stay, the question for the Committee to answer becomes how to deal with this innovative technology and public opinions on it. The advice of the Committee to the government after the debate can be characterised as a procedural programme for monster management. The Committee formulates it as follows:

> Genetic modification is an impressive new technology, but the application needs the support of the public... The government and political parties have to learn to deal with that. Recovery of trust in the government is most important, because the government sets the boundaries for science and industry. The committee has taken this into account in her recommendations. The recommendations will be summarized here:
> – A national or European Food Authority should be installed which can operate completely independent.
> – The government should develop better methods to start a dialogue with the broader public in an early stage.
> – Freedom of choice should be optimally guaranteed by making good accessible, detailed product information obligatory (Terlouw 2002, 4).

Based on her work on order and religion, Douglas concludes that the way cultures react to monsters is related to the character of the group. Smits translates this to a 'theory of monsters' in which four ideal typical styles of monster management are introduced. As we will see, the style of the Committee can easily be characterised as a ritualistic style.

The four styles that Smits describes are:
a) Dogmatic style – monster exorcism: Cultural classification is in the dogmatic style strict and permanent. Knowledge and morals are inflexible. Monsters are in the most positive case ignored; more often will they be handled as aberrations and therefore exorcised.
b) Ritualistic style – monster adaptation: The cultural classification is less rigid and more subtle; the dichotomy is less straightforward. Instead there are rituals and a complex structure of rules. When these are closely followed it is normally possible to fit in the monster. The monster is considered nothing – fundamentally – new.
c) Pragmatic style – monster assimilation: In this style both monsters and classifications can be adapted. Cultural boundaries are considered as

human conventions, and become more instrumental than fundamental. Monsters are assimilated and in the process of assimilation both the monster and the cultural classification are modified.

d) Romantic style – monster embracement: Fascination instead of fear is the leading idea in this style. Contradictions are considered to be of a higher order which cannot be reached with mundane rationality. Cultural classification will be kept intact since there is no urge to solve the contradictions. Monsters are not refused but accepted (Smits 2002).

The advice of the Committee is a good illustration of the ritualistic style of the Committee. This style is well suited for an utilitarian approach of ethics. Although the Committee's use of the concept of ethics is not very straightforward or explicit, it shows an utilitarian idea of ethics. The Dutch philosopher Swierstra once characterized utilitarian ethics as 'regulatory ethics'. Regulatory ethics is easily incorporated in policy making and procedural regulation, since its goal is to answer the practical question how to live together without doing (unnecessary) harm to each other. Regulatory ethics is much less interested and involved in virtues or questions about the good life (Swierstra, Bruggen, et al. 2000).

Although ethics is not considered to be the most relevant aspect of the debate by the Committee, it is still very present in the report of the Committee. But they use ethics in a peculiar way. Reading the report one gets the impression that 'ethics' is an autonomous category of arguments and deliberations in the debate, which have no connection whatsoever with other themes like freedom of choice, health, risks, use of nature and environment or fair relations between the Netherlands and developing countries. This boxing of ethics is most clearly illustrated by the statistics done on reply forms filled in by grammar school students. The results of the statistics were presented in a matrix. In this matrix the advantages and disadvantages of biotechnology in food were given for several categories. 'Ethics was one of the boxed categories and put besides categories as "agricultural production, environment, third world, safety, consumers"' (Terlouw 2002, 45). The Committee makes ethics a special category to such an extent that it disappears as a relevant part of the debate:

> As far as there are objections to biotechnology for food, it appears that only for a few people they arise from ethical or principal sources. Utilitarian deliberations are for the Dutch public in general more important. (Terlouw 2002, 19)

In the eye of the Committee utilitarian deliberations seem not connected with ethics. Already before the actual debate objections are made to this way of conceptualizing ethics.

> Mr Meijboom from the Centrum voor Bio-ethiek en Gezondheidsrecht at Utrecht University stated in the first debate of this series that the government in the Integrale Nota Biotechnology (INB) wrongly makes no relation between ethics and questions about safety, transparency of government and freedom of choice of the consumer. Ethics is presented as an isolated domain; the domain in which complicated identity-defining questions are at stake. In reality discussions about the acceptability of risks and the autonomy of the consumers (expressed in his freedom of choice) are not isolated from morality, states Meijboom; to the contrary. (Terlouw 2002, 74)

Since Meijboom makes his remark early in the first debate of a series (Wageningen, March 2001) he cannot and does not draw conclusions about the debate itself. But by referring to the Integrale Nota Biotechnologie, he criticizes the concept of ethics as used in governmental policy making on biotechnology in general. His remarks can be taken as an advice to the Committee to act differently.

In the report of the Committee the remark of Meijboom is presented as an individual statement, with little use for the debate. The Committee does not give any reflection on its own use of ethical concepts and insights. Meijbooms remark is placed in annex G, meaning that it was heard by the Committee but did not have much impact on its work.

By its focus on utilitarian arguments, the conclusions by the Committee that other than utilitarian arguments have little relevance in the debate, seems to be much guided by presuppositions, and less a result of the debate itself.

The strict but implicit boundaries between utilitarian arguments and fundamental arguments or arguments of principle conceal the interaction between those (analytic) categories. Utilitarian arguments are closely related to more fundamental ideas. The argument of safety of biotechnological food may be utilitarian in nature but it implies also more fundamental ideas about the value of life and relevance of human health or the environment.

The Committee presents the mentioned utilitarian arguments of the participants in the debate as a decision of the participants to have a debate on a utilitarian level. However, for many participants in the debate those

utilitarian arguments are directly related to principles and more fundamental ideas:

> For most participants, when the goal is considered sufficiently useful the end justifies the means of genetic modification, irrespective of the fundamental judgement one has on improvement (Terlouw 2002, 7).

> The application of gene-technology on animals for food production appears to raise much more opposition for many people compared to applications with plants. Only when very urgent matters are at stake, like medical use for a genuine problem (and not only fighting symptoms), the public is willing to deviate from this principle (Terlouw 2002, 7).

Besides that, several participants in the debate used both more fundamental and utilitarian arguments in the debate. Several NGOs who resigned from the debate organized by the Committee, brought up both missing utilitarian arguments on safety and risk but also criticized the absence of fundamental questions as stated before.

Monster Exorcism by NGOs

> Of this aselect group, 37 per cent held that these crops should not be grown at all (Terlouw 2002, 13).

This thirty-seven per cent of the public has a dogmatic style towards GM food. They do not want any relation with this monster. There is no place for GM food at all in society. The monster should be exorcised. Greenpeace has a similar dogmatic style in its advocacy of a strict interpretation of the precautionary principle. This states as long as risks are not clear, one is not allowed to use the technology on a larger scale (Smits 2002). The monster can only be hold captive in a well-guarded laboratory and should not be around in society.

With Greenpeace, fifteen NGOs from the fields of environmental issues, third world aid and animal welfare[1] were critical about the assignment of the Committee from the start but they were prepared to give the debate a chance. Their critique was both on form and content of the debate. They formulated their main point of critique most clear in a press announcement:

The public debate (as organized by the Committee) deals with the conditions under which genetic manipulation is acceptable; it does not address the question whether genetic manipulation is desirable (Greenpeace, Alternatieve Konsumentenbond, et al. 2001).

In the assignment of the Committee and the agenda for the debate the conditions under which GM food is the central topic, leaving insufficient space for more fundamental discussion and for the more dogmatic stance of monster exorcism. Besides critique on the agenda of the debate, the information used by the Committee in the debate is criticized. The video the committee showed was considered more like a promotion movie than a source of objective information.

These objections are discussed with the Committee and adaptations were made by the Committee. Having seen the new information material and having visited the opening event of the debate, and in accordance with their dogmatic style, these NGOs decided to no longer participate in the debate organized by the Committee since they still could not agree with the information provided on GM food, the methodological set up of the debates and the agenda used for the debates.

Monster Assimilation by *Kerk en Wereld*

Without being dogmatic, one can still ask fundamental questions. *Kerk en Wereld*, a church and society organization of the main Dutch Protestant churches, stated, for instance:

Kerk en Wereld pleas for giving attention to presuppositions from philosophy of life and to the questions hidden behind ethical aspects. That does not mean particularly questions as about 'playing God' or 'to go against the order of creation', since these are not live questions for church members. More relevant are questions like: how do we relate to our own vulnerability and to the 'imperfections' of nature, do we keep fighting against these of do we accept limits? Are we still able to handle the (inevitable) tragic aspects of life? What are our moral values and judgements based on? What do we give our deepest trust: our own capabilities, science, nature, God? These questions lead to the fundamental question whether we want to continue with genetically modified food. This question too asks for attention in the debate (Terlouw 2002, 99).

These questions are not aimed at exorcising the monster, nor at stating that there is nothing new under the sun and accepting the monster after some ritual debate and regulatory ethics. This is a plea for a debate on how one wants to live and how we want to live together with monsters. These are questions of 'ethics of life', as Swierstra calls them. They are hard to answer, and often even harder to agree on, but fundamental if one wants to position oneself to the monsters we create and meet. With these fundamental questions, the answers are open. Nothing is God given or a natural fact, an open debate becomes possible. Both the monster and the cultural conventions are open for debate and can be, if decided upon, be modified according to new insights and or experiences. With these fundamental questions the pragmatic style comes to the fore.

No Religion?

It is not coincidental that Kerk en Wereld introduces ethics of life questions. These questions are religious questions, questions about the fundaments of life and living together in this world. This makes the public debate 'Eten en genen' interesting for those interested in the relations between technology, religion and food. This may not be clear at first instance since in the 131-page-long final report and conclusions of the Committee the word 'religion' does not appear once and there are only three references to 'philosophies of life' of which two just deny its relevance:

> There were hardly any purely ethical or 'philosophy of life' discussions. But during the debates ethical deliberations were made. A big majority of the participants is reasoning from a utilitarian perspective (Terlouw 2002, 45).

> A minority of the participants reasons from principles like holding out the boundaries of species. An even smaller minority reasons from principles based on philosophies of life (Terlouw 2002, 45).

The Committee has a hard time appreciating the religious layers in the debate. The utilitarian agenda, where the conditions under which biotechnology for food is acceptable are central, leaves little space for questions about views on life, let alone religion. To see the religious layers and connections becomes even harder if one searches for purely ethical or philosophical views on life in the discussion. Pure religion is not to be found,

nor is pure science, politics, ethics, or economics. These are analytical and not empirical categories. One misses the religious agenda when one uses a utilitarian agenda and boxes religion as an autonomous category. However, that does not imply there are no religious layers.

The focus of the Committee on utilitarian aspects results in several leftovers in the debate. The category of 'ethics' as referred to by the Committee is one such leftover. These cannot be denied, but in the utilitarian eye of the Committee they cannot be valued nor used in its analysis of the debate. The same counts expression in which GM food is related to the idea of playing for God, feelings of disgust and discomfort, unnatural behaviour or characterizing names as 'Frankenstein food'.

These leftovers are to be better understood when we take Douglas' ideas on purity and danger once more into account. The leftovers all refer to feelings or ideas of transgressing natural or God given boundaries. Things become out of place and monstrous. There is an order in the leftovers of the Committee. As Douglas has shown, all ideas on purity and danger are connected to the order we create with our cosmologies. Monsters have no intrinsic monstrous character. Monsters are the result of our ideas about life and what we think is natural, God given or an abomination. It is religion with which we decide what is monstrous, dangerous or pure. One can be dogmatic and live strictly to the precautionary principle, or adopt a ritualistic style relying on self-appointed rationality and regulatory ethics. It is no less religious than asking fundamental questions about how to live with monsters and being open to discuss all options. Every style produces and uses its own order and leftovers.

Conclusions

Since this monster called GM food was constructed and now does exist in our world, it is not fruitful to deny its existence nor to deny its monstrous character. We have to learn to deal with the monster. The question that should be discussed is how do we relate to this monster and (where) do we want to place it in our society and culture? The answer can be that we choose to destroy or exorcise the monster, but we can't deny its existence.

We have to relate to the monster and place it in the world. To decide on our style of managing the monster, functional insights and utilitarian arguments are not enough. One could even say that, in case of a monster, information on functions, risks, and dangers are not available in detail. The monster is too new, unknown, and ambiguous for that. From its na-

ture it does not fit in our classifications and orders of thinking. We cannot simply reproduce our ideas and insight into order and classification on the monster. Monsters challenge our institutions, intuitions and knowledge. The challenge is to decide on our approach of the monster, without the backup of scientific knowledge, strict procedures or fit institutional structures.

Managing monsters is about dealing with purity and danger and these are directly related to order and classification. For Douglas, classification is a human universal and part of religion. This view makes our approach of monsters a religious endeavour. Managing monsters is about making connections and relations between us, the monster and others. It is about reserving a place for monsters but also for ourselves and others. One could say that in Mary Shelley's story of 'The monster of Frankenstein' this has been the problem. The monster was created but not domesticated and given a place. If Frankenstein had educated and domesticated his monster well, it may have become a more pleasant and cooperative monster to the world and thereby could have contributed to a better world.

The idea that monster management is a religious activity, means that one has a new perspective on the role of religion in the debate. For the Committee, religion was not part of the debate. With Douglas, I would state the contrary. Religion is fundamental to the debate, although in the set-up of the Committee this fundament is disguised. 'Kerk en Wereld' tried to put the religious aspects on the agenda of the debate. The Committee did not incorporate these points. Religion became marginalized and went 'underground' in the debate. Regularly uttered terms and phrases as 'unnatural', 'disgusting', or 'playing God' gave expression to that. Besides that, one could claim that religion's questions on purity and our relation and role in the world were translated into more utilitarian terms on risks, health and need and necessity for GM food.

Connected to the problem of 'religion' going underground in the debate, is the problem of the religion of the Committee. The Committee makes the ritualistic style and utilitarian ethics starting points and reference points for the debate. This leaves little room for other opinions, approaches, questions and styles. The study of the religious aspects of the debate can be a valuable source to develop a debate that is more informative and in which all participants and subjects are done justice. Anthropological approaches (like Douglas' and Smits') can help us to rediscover the relations between monsters/technology and religion and besides that give insight in the dynamics of debates. This can help us to track down our (presupposed) ideas, values and practises about specific monsters. It

might also inspire us to new ways and lead us to useful traditions in this world full of unclassified monsters.

Note

1   Alternatieve Konsumentenbond, Both Ends, Platform Biologica, Dierenbescherming, Greenpeace, Hivos, ICCO, Inzet, Kerken in actie, Milieudefensie, Natuur en Milieu, Nederlands Platform Gentechnologie, Novib, Proefdiervrij, XminY.

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10 Substantial Life Extension and Meanings of Life

Peter Derkx

Introduction

Substantial extension of the human lifespan has become a subject of lively debate. One reason for this is the completion of the Human Genome Project in 2001 and the experimental avenues for biogerontological research the project enables. Another is recent theoretical progress in biogerontology (Austad 1997; Hayflick 1994; Holliday 1995; Kirkwood 1999; Ricklefs & Finch 1995). The character of modern culture is at least as important a factor in explaining why life extension intervention is currently debated. Three existential factors that play a role here are fear of death (fear of no longer existing), fear of the suffering involved in the process of dying, and the sometimes obsessive desire to preserve good health in order to pursue personal life projects and goals (Turner 2004). The historical background of this motivational pattern is 'the decline since the Renaissance of faith in supernatural salvation from death; concern with the worth of individual identity and experience shifted from an otherworldly realm to the "here and now", with intensification of earthly expectations' (G.J. Gruman quoted in Post 2004a, 82, see also Baumeister 1991, 77-115).

There is a lot of interest in substantial life extension, but would it really be a good thing? Experience with other revolutionary technologies shows us that once they exist, they can no longer be stopped. Too much has been invested in them: once research has produced an effective technology catering to all-too-human desires, there is seldom a way back. So we had better investigate the worldview aspects of considerable human lifespan extension now, before this extension has become genuinely practicable, or, before large sums of money have been spent on it.

In this article I will first consider what 'substantial life extension' and a 'meaningful life' means. After that I will deal with some arguments and considerations concerning the relationship between the two.

Substantial Extension of Human Lifespan: What Are We Talking About?

Before embarking on a discussion about the meaning of 'substantial extension of human lifespan', it has to be clear what we mean by it. We can distinguish between four possible outcomes of a biotechnological enhancement of the human lifespan. Drawing on work by Harry Moody (1995) and Eric Juengst and others (Juengst et al. 2003) we can name these extended morbidity, compressed morbidity, decelerated senescence, and arrested senescence.

Extended morbidity means that the average human life becomes longer because the period of (co)morbidity at the end is lengthened. Through good hygiene, nutrition, education, housing, medical care, welfare arrangements, and social services, old people with one or more chronic diseases stay alive longer. This means that average life expectancy increases, but this need not be an increase in human flourishing or a cause for joy. Extended or prolonged morbidity does not imply an increase in maximum human life expectancy. A typical time structure for a human life with extended morbidity could be: growing up from 0 to 20, adult health span 20 to 55, period of growing morbidity up to 95 as the average age at death and with an unchanged maximum of around 120. Some scientists (Baltes 2003) fear extended morbidity as the most likely scenario, with Alzheimer's disease as one of the main threats. Since nobody wishes it to become reality, we shall not discuss the desirability of this type of life extension here.

Compressed morbidity is a scenario in which the onset of serious age-associated maladies, the infirmities at the end of life, is delayed as long as possible and thus these are compressed into a shorter period. The maximum human lifespan of around 120 is accepted as fixed. The focus of compressed morbidity is that the average human health-span is extended to a much longer period from 20 up to 'the ideal average lifespan, approximately 85 years' (Fries 1980, 130), followed by a relatively short period of decline before death, a period of one or two years at the most. The feasibility of compression of morbidity for the life stage between 55 and 85 was first argued for by James Fries in 1980 and it has been embraced by many, for example the biogerontologist Robert Arking (Arking 2004).

Not long ago three officials of the World Health Organization wrote that Fries's tenets and vision 'now lie at the heart of today's approach to NCDs [non-communicable diseases], ageing and health with its focus on the life course, health promotion, and "active ageing" [use it or lose it]' (Kalache, Aboderin & Hoskins 2002). Because its original assumption is that the maximum human lifespan is biologically predetermined at around 120 and that death at an average age of 85 is 'natural' and even 'ideal', compression of morbidity is not a form of substantial life extension. It has to be noted, however, that several gerontologists think that compression of morbidity is actually impossible. They think it is highly unlikely that we will be able to increase the health-span without simultaneously increasing the lifespan and the period of morbidity at the end (Neugarten 1996). Compression of morbidity would then be practically the same as delayed or decelerated senescence.

In *decelerated senescence* the processes of biological ageing are slowed down, resulting in a higher average life expectancy and probably a higher maximum life expectancy. Decelerated senescence means that the period of good health in a human life is extended (as in the scenario of compressed morbidity), but the period of morbidity remains the same or is lengthened as well (as in extended morbidity). The average pattern of a human life in this case could be: growing up 0-20, adult health-span 20-90, and period of decline after that with death at an age of about 110. Maximum life expectancy at birth might be 140 years. Richard Miller is a respected biogerontologist who thinks that such a decelerated senescence is the most likely development. 'Nature can slow down aging, and so, it turns out, can we. There are so far two approaches that work for sure: diminished total caloric intake and changes in genes that regulate the rate of early-life growth' (Miller 2004, 233). A recent and clear manifestation of the idea of decelerated senescence can be found in an article by Jay Olshansky and others, including Miller. They can be regarded as representatives of a growing chorus of scientists calling themselves 'moderate', 'modest', and 'realistic'. They firmly believe that a current investment of 3 billion US dollars annually will make it possible to decelerate ageing and to delay the onset of ageing-related diseases and disorders among the baby boom cohorts by seven years.

> People who reach the age of 50 in the future would have the health profile and disease risk of today's 43-year old; those aged 60 would resemble current 53-year-olds, and so on. Equally important, once achieved, this seven-year delay would yield equal health and longevity benefits for

all subsequent generations, much the same way children born in most nations today benefit from the discovery and development of immunizations (Olshansky et al. 2006, 32).

Arrested senescence refers to relatively complete control of the biological processes of senescence. In this scenario, ageing in the sense of senescence or physical and mental deterioration does not occur anymore, or the human organism is cared for very well (maintenance) and the senescence that occurs is periodically repaired by a rejuvenation cure. For decades, or centuries, the chance (probability) of dying does not increase with age anymore, but stays rather constant. People still die, but they no longer die from the slow accumulation of damage and chronic deterioration. Instead they die from accidents, murder, or war. In this scenario people can become very old. Average life expectancies of 150, 500 or even 5000 years are thought to be possible. Talking about engineering arrested senescence may sound as if we have entered the field of quackery, pseudoscience, or science fiction. However, one of the strongest defenders of the scientific credibility of Strategies for Engineering Negligible Senescence (SENS), Aubrey de Grey (De Grey 2003; 2005; De Grey et al. 2002), forcefully argues that humanity needs to set aside massive sums of money for a War on Aging. He has also, together with relevant specialists, outlined and embarked on detailing a set of biotechnological measures we could use to beat the 'seven deadly things' that accumulate with age as side effects of metabolism. According to De Grey these seven problems together constitute the core of aging. The seven categories of damage to be solved are: 1. cell death without matching replacement (especially important in the heart and the brain); 2. unwanted cells, e.g. visceral fat and senescent cells (important in arthritis and diabetes); 3. nuclear (epi)mutations causing cancer; 4. mitochondrial mutations; 5. extracellular protein/protein cross-links (e.g. leading to high blood pressure); 6. extracellular aggregates (e.g. resulting in amyloid involved in Alzheimer's disease); and 7. intracellular aggregates (e.g. resulting in hardening of the arteries). De Grey proposes to remove and repair the damage that has accumulated every ten years or so. He does not believe in prevention of damage. His type of arrested senescence is rejuvenation. He expects that in the period between 2025 and 2040 we will be able to fix the seven problems of senescence (to a large extent through genetic interventions and stem cell therapies) and that around 2050 'robust human rejuvenation' will be generally accessible. He realizes that the first fixes will not be perfect, but they will give us time to develop better repair methods. Highly respected biogerontolo-

gists have attacked De Grey's ideas forcefully (Estep et al. 2006; Warner et al. 2005). It is important to note, however, that the difference of opinion is mainly political, ethical, and related to funding and estimates about the speed of future developments, not about the possibility of substantial life extension in itself. A last remark to conclude this preliminary section: the [US] President's Council on Bioethics has taken 'the possibility of extended youth and substantially prolonged lives' very seriously. In its 2003 report *Beyond Therapy* (President's Council on Bioethics 2003, 159-204) the Council warns against substantial life extension as a threat to the meaning of human lives.

Meanings of Life: A Theory

Before going into arguments on life extension and meanings of life we also have to explicate the concept of meanings of life. A useful point of departure is social psychologist Roy Baumeister's book *Meanings of Life* (Baumeister 1991) in which he develops a theory which gives us some grip on the elusive concept of a meaningful life. According to Baumeister, meaning is about connection. People have a need to put things, actions, and projects in a broader context and this need can be subdivided into a number of needs for meaning. An important one is the need for *purpose*. The vital thing here is to interpret one's current activities in relation to future or possible goals or fulfillments. A second need for meaning is the need for *moral worth*. People want their life to be of positive value and their choices to be right and good and morally justifiable. A third need is for *efficacy*, competence or control. People do not only want to have purpose in a life of moral value, they also want a certain capability or power to achieve these goals and realize these values. They want to feel free and competent and able to make a difference. They do not want life to happen to them, they want to direct it at least to some extent, and often people prefer the illusion of control over a more realistic sense of powerlessness. The last need for meaning mentioned by Baumeister is the need for self-respect, self-esteem, or *self-worth*. Humans not only want a life of positive moral value, they also want to have worth themselves. They want to find some basis for positive self-worth, they want to have some claim on respect, both self-respect and the respect of others. Usually this need takes the form of finding an aspect in which one is better than others, a reason to be respected by others. But this reason need not always be moral. Although self-worth is often related to a combination of moral worth and

efficacy, it is not the same as this combination. Someone who has left his or her partner, may feel greater self-worth because of this tough decision (it feels better than being rejected and abandoned by the other), but he or she may feel guilty at the same time, in doubt about the moral value of the act.

Baumeister's theory has been improved by others. Jan Hein Mooren (1998) has argued that a meaningful human life is a life that is sufficiently understood as part of a world with a certain structure and causality. People have a need for *comprehension*. They want to be able to understand and explain the world they live in, what happens to them and why they act as they do. They want to be able to create a coherent life narrative, to tell an intelligible story about their life. They want their new experiences to fit their past and to conform to what they know about their environment, their world. Through 'interpretive control' the need for comprehension can be linked to the need for efficacy. Adri Smaling (unpublished) adds a last need for meaning; the need for *(comm)unity*, which to some extent can be seen as the flip side of the need for efficacy. People not only have a need for controlling things, but also a need for release, for abandonment, they want to let go. They do not want everything to depend on themselves, but they also want to be part of something bigger, to feel connected and as one with others or the other. Altruism is related to the need for moral worth and the need for (comm)unity.

Baumeister has argued that it is very implausible to think of *the* meaning of life as one single overarching good thing everything in life connects with, completely and eternally. This is what he calls the myth of higher meaning. Life is bound to have several meanings and to have trivial, meaningless, and unruly fragments as well. Moreover, it often happens that meanings of life conflict with each other (Berlin 1991). Life is inescapably characterized by absurdity, conflict, and change. However, human beings keep searching for meaning, which is often woven together into *a connecting narrative, a story to live by* (Dresden 1990; McAdams 1997). Living your story turns out to be important, even though your life story is not your whole life and even though your story has more than one important plot. Meaning is one of life's principal tools for stability, continuity, and identity.

This theory of a meaningful life is partly based on findings of empirical psychology, but it is obvious that a fully fledged theory needs historical, sociological and ethical input. Baumeister's conviction that in modern Western society the self has become the major base of values (not needing further justification itself) shows this clearly. Baumeister thinks that

seeking, knowing, or finding yourself (personal identity), creating your-self (self-actualization), and self-worth have become more important than religion, morality and tradition. He also indicates (1991, 127) that in mod-ern society it is more difficult to satisfy the needs for moral worth and purpose than those for efficacy and self-worth. In this context, Charles Taylor's *Sources of the Self* (1992), Anthony Giddens's *Modernity and Self-Identity* (Giddens 1991), and Joep Dohmen's *Het leven als kunstwerk* (*Life As a Work of Art*) (2008) raise important philosophical issues about au-tonomy, authenticity, life politics, the art of living, hypergoods, and tran-scendence. Moreover, a meaningful life is not equally within everybody's reach, and some social circumstances are more favourable for achieving it than others. '[I]n many societies that we call advanced, such as the United States, whole segments of the population grow up with so much chaos and so little order that "planning" is a foreign word' (Hagestad 1996, 208). Given all these issues, it is clear that the theory of meanings of life is still in its infancy, and that much more empirical, theoretical, and philosophi-cal research needs to be done.

An important issue is how a meaningful life relates to the quality of life, to happiness, life satisfaction, or *subjective well-being* (Diener 1984; George 2000; 2006; Pavot & Diener 2004; Ryff 1989; Ryff & Singer 1998; Veenhoven 1996), and to the more objective concept of *human dignity* as proposed in human rights theories or human capabilities theories (Buiten-weg 2007; Nussbaum 2001; 2006; Nussbaum & Sen 1993; Pogge 2002). In this context, Baumeister's analysis of the parenthood paradox, described in the following paragraph, is relevant (1991, 160-166).

A large amount of evidence supports the conclusion that having chil-dren produces worries and reduces happiness, but in spite of this many people want children. The difference between a happy or satisfactory and a meaningful life may largely explain the parenthood paradox. However, much here depends on the meaning given to the concepts 'happy' and 'meaningful'. Baumeister's parenthood paradox seems to presuppose a he-donic interpretation of happiness, life satisfaction, and subjective well-being, as argued for by Ed Diener (1984) and Ruut Veenhoven (1996). Life satisfaction, positive affect, and absence of negative affect are central here. If, following Carol Ryff (1989), subjective well-being is interpreted eudai-monically, emphasizing purpose in life and thus 'clearly imposing a defini-tion of life quality on individuals who may or may not evaluate their own lives on those criteria' (George 2000, 7), the difference between 'well-be-ing' and 'meaningfulness' becomes smaller. Ryff's eudaimonic subjective well-being originally had six dimensions: self-acceptance, purpose in life,

personal growth, positive relations with others, environmental mastery, and autonomy. After some more empirical work she reduced the relevant dimensions to four, of which the first two are primary: purpose in life and quality connections to others, and the other two are secondary: positive self-regard and mastery (Ryff & Singer 1998).

To my knowledge little theoretical and empirical research has been done to improve Baumeister's theory of 'meanings of life'. The alternative theory of 'eudaimonic subjective well-being' has turned out to be much more fruitful, up to now. Starting from this theory a considerable amount of research has been and will be published (see www.midus.wisc.edu). However, as indicated above, Ryff's concept of subjective well-being shows much overlap with Baumeister's and our theory of a meaningful life. The most important remaining difference appears to be our emphasis on the need for moral worth. And because in my considered opinion morality and ethics posit objective or at least intersubjective norms for relations with others, moral worth makes a meaningful life – in the same way as human dignity – a more than purely subjective concept. To achieve progress in the theory of meanings of life interdisciplinary research, which combines psychology, philosophy (especially ethics), and other academic disciplines such as sociology, history, cultural anthropology, and evolutionary biology, is necessary.

In the remainder of this article I will indicate a few important considerations around the meanings of life that regard effective substantial extension of the human lifespan; a detailed examination of all of these considerations is not my purpose here, nor is it even possible. By substantial extension I mean decelerated senescence and arrested senescence as outlined earlier on in this chapter. Decelerated senescence is much more probable as the scenario for decades to come, but arrested aging certainly is an interesting scenario. It cannot be completely ruled out for the long run and it is interesting because it forces us to think in new ways about what we think most important in our lives and societies. This is important even if arrested aging will never happen.

Life Extension and Sense of Purpose

A very 'natural' argument in favour of substantial life-extension is that in a very long life we will be able to complete important projects we have planned and embarked upon (Hagestad 1996). For example, at conferences I have met quite a few biogerontologists and philosophers who argued

that it is unfortunate that when we finally start to understand the topic we study, our cognitive abilities begin to dwindle and our death comes near. However, a sense of purpose does not depend on finishing our projects. When we complete a project or see a long-standing desire fulfilled, this will bring a sense of satisfaction and sometimes efficacy, but to experience a sense of purpose in life it is necessary that we keep striving for something in the future, for something that is unachieved but imagined to be possible. As every scientist and scholar knows, achieving better knowledge of a subject is possible, but it always opens up new questions we had not yet thought of before. Complete knowledge always has the character of a receding target. This means that a much longer life will make it possible to finish larger projects, to plan longer careers, to not only see our children and grandchildren grow up but also our great grandchildren. Essentially, however, the situation will not change as far as sense of purpose is concerned.

Authors criticizing substantial life extension often point to loss of meaning. Thus, Hans Jonas wrote: 'Perhaps a non-negotiable limit to our expected time is necessary for each of us as the incentive to number our days and make them count' (Jonas 1985, 19). The objection to life extension seems to be that, when we have a lot of time to reach our goals, reaching these goals becomes meaningless, because we have known all along that we would reach them, this year or another. Yet much can be said in response to this. What does 'making our days count' exactly mean? Horrobin (2005, 14) points out that it is an odd argument to assert that people enjoy playing football today and experience no ennui in doing so only because they are aware that they cannot do it three centuries hence. Perhaps the most fundamental criticism of Jonas's argument is expressed by Christine Overall (2004). She states that we should not argue against increasing human longevity by reference to the limited parameters set by current life expectancies. According to her, this is the fallacy of begging the question. When the context changes and life expectancies become much longer, our judgment of life's possibilities and meanings will also change. Not only will childhood and age be redefined, but concepts like schooling, education, marriage, partnership, friendship, sexuality, gender, father, mother, parent, grandparent, family, career, retirement, nationality, and citizenship will also take on other meanings. Together these changes will constitute new moral systems, purposes, and contexts for meaning. But I think Overall exaggerates. The way we think about human fulfillment now, of course, is relevant to our well-considered present-day judgments on prolongation of life. I would agree with her, however, if she

argued that we ought not to evaluate substantial life extension *only* by reference to the kind of life that we know now. Certainly, a comprehensive evaluation of future possibilities requires not just norms, values, facts and extrapolations, but also imagination.

It is a fact, of course, that lives with less than the average life expectancy can be experienced as meaningful. But even if life extension would not increase the possibility to lead a meaningful life, it might result in new (better?) ways of having a meaningful life, as has happened in the past:

> [T]he increase in life expectancy [since 1900] means that individuals now have a greater chance of growing old. In a sense, the course of people's lives has become more predictable. People expect to reach a respectable age and they live their lives accordingly. The growing certainties in life have been accompanied by a shift in norms and values. In the early twentieth century, people had a more fatalistic approach to life: things simply happened, and changes in life unavoidably befell people (...) This fatalistic approach to life has been replaced by a more proactive attitude, or 'choice biography', the notion that people can shape their own lives (Dykstra 2002, 10; see also Hagestad 1996, 208).

Another round of substantial life extension might cause people to take on an even stronger managerial attitude towards life. However, that human lives can be planned towards chosen purposes in the future will remain a matter of degree. Human vulnerability remains. A society with more (expensive) health care technology for its members creates the conditions for more instead of fewer insurance policies and other risk-averting strategies. New risks (among them corporate and state uncertainties transferred to individual citizens, see Dannefer 2000, 270) and the old risks that remain, might even become more oppressive and threatening because there is more to lose. That is why Aubrey de Grey does not want to lecture in dangerous countries and why he thinks that the prevention of traffic accidents will be given absolute priority in societies with greatly extended life expectancies.

Life Extension and Efficacy

Research shows that having a fair amount of control over life's circumstances and having a relatively high degree of self-esteem are factors in determining a more than average life expectancy (Marmot 2005). So hav-

ing (a sense of) control is good for longevity. But do control, life extension and a much longer life contribute to a more meaningful life? The desire for control can go so far as to be self-defeating and counterproductive. Furthering longevity might involve such hard and manifold efforts that life becomes meaningless rather than meaningful. A body repair every ten years, as envisaged by De Grey, is not too big a price to pay for a long and healthy life, but when a substantially extended lifespan and health-span demands constant attention every day, the gain in years might be offset by a loss in quality of life. Medicalization could turn out to be a serious problem connected with life extension (Porter 1999; Verweij 1999). A good balance would have to be sought, as otherwise the controlling efforts needed for a longer life might start to make human life meaningless (and lives experienced as meaningless might tend to become shorter again).

Life Extension and Moral Worth: Distributive Justice

An important aspect of a meaningful life is that it can be justified morally, and one of the most important moral problems concerning the engineering of substantial life extension relates to justice. Justice is about the distribution of (the lack of) things we value. At the beginning of this article I distinguished between different kinds of life extension, but I left out one very important factor: the 'social gradient' of longevity. Life expectancies differ according to social status. Michael Marmot's recent summary starts with an illustration from the United States capital:

> If you take the Metro from the southeast of downtown Washington to Montgomery County, Maryland, in the suburbs – a distance of about 14 miles – for each mile traveled life expectancy rises about a year and a half. This is the most life-enhancing journey in the world. There's a twenty-year gap between poor blacks at one end of the journey (male life expectancy fifty-seven), and rich whites at the other (Marmot 2005).

Such inequalities in life expectancy at birth exist all over the world (Mackenbach & Bakker 2003; Marmot 2004). How do we understand these inequalities? Marmot's analysis comes down to this. An important determinant of an individual life's longevity is (1) a favourable genetic endowment and early life history, but, though important, this is only a small part of the story. Other important elements are: (2) living in a country above the absolute poverty level – a GDP of about USD $5,000 – above this, level

differences in GDP between countries do not matter very much; (3) high relative social position (as regards status, employment grade, relative wealth and extent of social participation); and (4) high relative freedom, autonomy, or control over life's circumstances – in many Western countries this still means for men especially at work, for women at home. The third and fourth factors are connected with the fact that a more equal distribution of household income in a country seems to be related to a higher average life expectancy. The second factor indicates a similar thing, but then with reference to a threshold kind of equality between countries. In some countries infant and child mortality is still terribly high, while the means to do something about it have been known to humanity for a long time, which shows that we live in a world full of injustice. What counts as injustice depends on the theory of justice that is used. However, whether one refers to human rights (Buitenweg 2007), Rawls's theory of justice as fairness (Rawls 1999a; 1999b), Dworkin's equality of welfare and resources (Dworkin 2000), or Nussbaum's capabilities theory (Nussbaum 2001; 2006), differences in average life expectancy at birth of forty years between countries (Japan and Zimbabwe) and more than twenty years for socio-economic groups within countries – differences which can be removed and prevented by collective social action – are hard to defend as morally acceptable. Now imagine what would happen if in such a world substantial life extension became possible through initially very expensive biotechnology such as longevity pharmaceuticals or gene therapy. The demand, backed by purchasing power, certainly in the beginning, would mainly come from young adults, the better educated, wealthier and higher-income individuals and those with higher initial endowments of health. Socioeconomic and health inequalities would be amplified. A small group of people with an already high life expectancy would have access to lifespan and health-span extension, but many less-privileged people would not. Surely this is ethically undesirable, is it not? 'The need-based claims of the worse off to have reasonably long lives have more moral weight than the preference-based claims of the better off to have longer lives' (Glannon 2001, 167, see also McConnell & Turner 2005, 61 and Mauron 2005).

The existence of social injustice can never be a valid reason for morally objecting to any improvement in the fate of human beings who do not belong to the most underprivileged ones. 'If we were to insist that technological developments of all sorts wait until the world becomes perfectly just, there would be absolutely no scientific progress' (Post 2004b, 537, see also Harris 2003 and Davis 2004). This is true, but I think one should not

stop there. Demanding equality and perfect justice within and between countries as a prerequisite to the development of life-extension technology is asking too much. Here, as often, 'perfection' would be the enemy of the good. The remedy for injustice is not denial of benefits to some with no corresponding gain to others, but redistribution (Dworkin 2000, 440). Not being able to do everything, or enough, should be no excuse for doing nothing. Efforts like the UN Millennium Development Goals are very important. It is important before 2015 to try to reduce the proportion of people living on less than a dollar a day by half, to reduce the mortality rate among children under five by two-thirds, to try to reduce the maternal mortality ratio by three-quarters and to halt and begin to reverse the spread of HIV/AIDS and the incidence of malaria and other major diseases (Garrett 2007, 32). These are challenging goals, but they are technically feasible and mainly depend on political will. In the same vein, ambitious but feasible goals could be formulated to do something about the shocking disparities in longevity between and also within countries. Christine Overall proposes a qualified prolongevitism (expanding the 'natural' maximal lifespan) within countries, one that will genuinely be for all, a kind of affirmative action in the field of life extension. She writes that increased research into conditions and diseases that affect groups of people with low life expectancy, like people of colour and poor people, is morally indicated (Overall 2003, 200). However, note that for longer life expectancies of less-privileged people more equality of income is more important than new achievements in high-tech biomedicine. As highlighted by Marmot, only three of the thirty-nine recommendations in the Acheson Report to the British government – *Inequalities in Health: Report of an Independent Inquiry* (1998) – are related to health care. 'The others covered the tax and benefit system; education; employment; housing and environment; mobility, transportation, and pollution; and nutrition' (Marmot 2004, 251). Reducing health inequalities might both be the ethically indicated and the most effective way to substantially extend the (remaining) life expectancies of many people; it will be more effective than biotechnological approaches aimed at decelerating or arresting senescence of human beings as a species. Many healthy human years can be gained by this heavily neglected form of life extension: *more equal longevity*.

One should realize, however, that priorities do not have to be absolute and generally allow for compromise. Serious and strenuous attempts to tackle the national and global social gradient of longevity certainly do not require that biogerontological research into the diseases of the oldest old and into the general underlying processes of senescence is stopped

completely. As far as international injustice is concerned, one should not forget that the numbers of the old and oldest old in developing countries will also increase rapidly. Already the remaining life expectancy of a woman who has managed to reach the age of sixty in Brazil (21 more years), India (18 years) and Nigeria (17 years) is not so different from the number of years an average sixty-year-old female inhabitant of the United States can expect to add to her life (24 years). The WHO anticipates that the per centage of people over sixty living in developing countries between now and 2050 will rise from 60 to 85 per cent of the total global number (Kalache, Barreto & Keller 2005, 36, see also Aboderin 2006 and Kirkwood 1999, 8). In China and India the elderly will outnumber the total current population of the US by mid-century (Olshansky et al. 2006, 31). It is possible that understanding the fundamental processes of biological ageing is the most effective way of fighting age-related diseases such as Alzheimer's (Post 2004b). Because of this, because we do not really know how to make the distinction between biological processes of 'normal' ageing and age-associated diseases, and because this distinction continues to change, it would be short-sighted to stop fundamental biogerontological research (Derkx 2006; Izaks & Westendorp 2003; Juengst 2004).

This whole section about justice relates to the sense of moral worth, an important component of a life which is experienced as meaningful. All things considered it should be very difficult for human beings to enjoy a substantially extended and at the same time meaningful life without contributing anything to the fight against ethically unacceptable longevity inequalities in the world.

Life Extension, Subjective Well-Being, and Meanings of Life

I have already made some remarks about the relation between life-extension and sense of purpose, but more has to be said. A longitudinal survey done in the US showed that people over 64 reported significantly lower levels of life purpose than younger adults. In addition, physical and emotional health were perceived as decreasing with age, and people over 74, especially women, rated themselves substantially lower on sense of control than younger age groups. At the same time, however, women over 54 and men over 64 rated their relationships with others more positively than younger adults did, and overall life satisfaction of men and women over 54 was more positive than that of younger people (Ryff 2006). De-

spite a decline in many areas, overall subjective well-being is as good, if not better, for older people as for their younger counterparts. This has been regarded as strange, but socio-emotional selectivity theory shows that there need not be a contradiction here:

> The theory maintains that two broad categories of goals shift in importance as a function of perceived time: those concerning the acquisition of knowledge and those concerning the regulation of feeling states. When time is perceived as open-ended, as it typically is in youth, people are strongly motivated to pursue information. ... In the face of a long and nebulous future, even information that is not immediately relevant may become so somewhere down the line. In contrast, when time is perceived as constrained, as it typically is in later life, people are motivated to pursue emotional satisfaction. They are more likely to invest in sure things, deepen existing relationships, and savor life (Carstensen 2007, 45).

Not so much a preoccupation with the past but with the present may be a sign that a person's life is felt to be coming to an end (see Hagestad 1996, 207). The decisive factor in socio-emotional selectivity theory is not chronological age but perceived remaining life expectancy. When conditions create a sense of the fragility of life, for example after the September 11 attacks in the US, or during the SARS epidemic in Hong Kong, younger as well as older people prefer to pursue emotionally meaningful experiences and goals in the short term (Fung & Carstensen 2006). So, what does this mean for substantial life extension? It is plausible that with a substantially higher life expectancy people will keep making plans and for a longer time will have a sense of purpose in life, but they will also pay the price of having to wait longer before they reach the state of more positive relations with others and higher overall satisfaction with life. When the expectations of the longevity of life increase, people will be more inclined to keep gathering information that might be useful some time in the future and to postpone gratification of emotional needs. However, it is not immediately clear what is the better situation. Is it more important to have a meaningful life or a happy life? Will later life be more emotionally gratifying if one has had a longer period of (successful?) striving for goals and fulfillments? Will 'old age' be happier if one has had a longer 'youth'? Will it be possible to live longer and at the same time to learn to be 'older and wiser' at a relatively early stage? Part of the answers will depend on the socially expected life course. 'The life course has become a princi-

pal cultural connection between individual lives and the larger society through an image not only of the good life, but of the timetable according to which it should be achieved' (J. Keith and others quoted in Hagestad 1996, 209).

A Final Issue: Is Life Extension Unnatural?

Important authors on life extension such as Hans Jonas (1992), Leon Kass (2004), Francis Fukuyama (2002), Daniel Callahan (1995), and Bill McKibben (2003) have exhorted us

> to live more or less according to nature, and warn that our efforts to depart from what we are will result in new evils that are more perilous than old ones. (...) Our focus (...) should be on the acceptance of aging rather than on its scientific modification. The intergenerational thrust of evolution, by which we are inclined toward parental and social investment in the hope, energy, and vitality of youth, provides the basis for a natural law ethic that requires us all to relinquish youthfulness (Post 2004b, 536-537).

It is very easy to dismiss these 'natural law positions' as an untenable deontological stance by pointing out that if substantial life-extension starts to occur in nature it begins to be 'natural', or by emphasizing that humans have always changed nature (including their own natural features) in the course of civilization. More or less the same goes for the religious versions of these arguments, referring to a God who has established the natural law. That humans should respect the will of God or that they should not attempt to play God, runs into similar intellectual difficulties as the exhortation to respect nature, and into additional difficulties as well. Referring to the will of God is not a very strong argument in a pluralistic democratic society that includes atheists and agnostics.

However, it is possible to discover something important behind these arguments from nature or God, even if one rejects the absolute deontological positions and is more inclined towards consequentialist ethics. Human nature is not blank, nor completely and always easily malleable. It is the result of millions of years of natural selection. Human beings are the result of evolution and as such they are very complex organisms with many trade-offs involved, referring back to environments of the past. We cannot design humans from scratch. Stressing that we ought to be wary

of bad unintended consequences is not the same as claiming that nothing should be changed. It is possible for a society to opt for a less-than-one-child-per-family policy to counteract undesirable effects of population-growth due to increasing old age survival, but will its individual citizens accept this policy and live up to it? Human nature is very flexible, but it is possible to ask too much of human beings. It seems relevant, for example, to consider the emotional implications of a population scenario with 9 billion people in 2300 with an average life expectancy at birth of about 100 years, few children and a high proportion of very old people (Basu 2004, 93). And we should not only be talking about what is possible for human beings, individually and as a group. We should also consider what is good for them and what makes their lives meaningful. To ask what desires and emotions are humanly 'natural' can be translated into a question about what desires and emotions are good and proper for human beings to have and deserve the opportunity to be acted upon.

More discussion about meanings of life is needed. But in individualistic secular societies people have many different ideas about what constitutes a meaningful life, so it will be difficult to reach consensus or even understanding about the value of life extension. Part of the difficulty is that in modern Western societies it is rather generally accepted that meanings of life are a private matter, not something about which to engage in public debate.

The variety of ideas about meanings of life will be very difficult to handle in a democracy, because the differences can be wide and not a matter of degree. 'Transhumanists' like Ray Kurzweil (Kurzweil & Grossmann 2004), Nick Bostrom (2003; 2005), Gregory Stock (2002), and Aubrey de Grey (De Grey & Rae 2007) feel that we should not accept biological ageing as inevitable. They argue that the fundamental biology of human beings should be changed in order to get rid of death caused by senescence. Other thinkers, not only of the natural-law variety, see this as a dangerous illusion, holding that the propagation and cultivation of ideas like this are very detrimental to the meanings of human lives. This difference in worldview is a crucial aspect of the debate on substantial extension of human life expectancy. Much of what is involved is expressed in these words of Michael Lerner:

> [We] need to do the spiritual work as we grow older to accept the inevitability of death rather than acting as though aging and death could be avoided if only we had a better technology. The enormous emotional, spiritual, and financial cost of trying to hang on to life as long as pos-

sible (and to look as though we were not aging) is fostered by a market-place that tries to sell us endless youth. It is also fostered by our cultural failure to honor our elders, provide them with real opportunities to share their wisdom, and combat the pervasive ageism with its willingness to discard people long before their creative juices have dried up, to stigmatize the sexuality of the elderly (...), and to provide little in the way of adequately funded and beautifully conceived long-term care facilities (Lerner 2006, 308-309).

Acknowledgements

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11   Enhancement Technologies: An Opportunity to Care?

Annika den Dikken

Critics of enhancement technologies emphasize that enhancement technologies essentially differ from medical treatment in the sense that their aim is not to sustain or restore good health. Enhancement technologies produce interventions designed to improve human form or functioning beyond what is necessary to sustain or restore good health (Juengst 1998). Examples of so-called enhancement technologies are cosmetic surgery, genetic manipulations, psycho-pharmaceuticals, and genetic drugs. Discussion about the distinction between medical treatment and enhancement has become a large part of the ethical debate.

The treatment versus enhancement debate takes place in the context of at least two larger backgrounds. First, the quest for a just distribution of scanty resources in the health care system asks for criteria to appoint the care most needed. Ethicists see it as their task to define these criteria. Second, the debate seems to be a touchstone for those who search for the moral boundaries of the growth of biotechnology. In the treatment-enhancement distinction some claim to have found a definable boundary for the acceptable use of human creational powers. Remarkably, the enhancement debate thus seems to be focused mainly on political, philosophical and theological objectives: political objectives, because moral boundaries must be transferable into a policy; philosophical, because moral distinctions can only be made through the rules of logic; and theological, because the conclusions of the debate have to coincide with larger worldviews. The above-mentioned contexts are of great importance, but ethicists and theologians in their search for definitions seem to have forgotten one of the main objectives of the bioethical origin, namely to protect vulnerable people from the social practices that arise in modern medicine (Cahill

2005). Central to the ethical work should be the people who are affected, those who need care, and those who suffer. Their situation should be the core of ethical interest.

A more important question than finding the differences between medical treatment and enhancement therefore seems to be whether so called 'enhancement technologies' can provide a possibility of care. Therefore it is necessary to describe what we understand as care and how we can estimate whether care is needed. When is it morally obliged to give care? I will show that social norms related to the body – such as norms of beauty, health, and performance – can cause human suffering and stimulate people to use enhancement technologies. Therefore these body-related values should be included in the ethical debate. An ethics of care and theological notions of love and redemption could shine another light on this topic, for they show responsibilities related to the social contexts of people who wish to alter their bodies. The task of ethics is not only to better the lives of people who have a disease, it also cares for people who suffer as a whole being.

Suffering, Illness, or Needs?

Why would we use the word 'suffering' in the context of the enhancement debate? It is more common to speak of 'illness', or 'needs' as a cause for moral responsibility. I choose not to use the term '*illness*', because I want to move away from the treatment-enhancement distinction. Illness is a medical term. Thereby it is not the simple opposite of health, when we, for example, use one of the holistic approaches of health as written down in the definition of 'health' used by the World Health Organization (WHO): 'Health is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity' (Preamble to the Constitution 1946). Social well-being is thus also an important factor in the concept of health formulated by the WHO. Because 'health' itself also has a medical connotation, I would rather use the general term 'well-being'.

Some examples will show that it is problematic to use the term 'illness' in cases where we can hardly deny that the well-being of people is at stake. The first example comes from the book *From Chance to Choice* where the authors use it as a case in their argumentation about the treatment/enhancement distinction:

> Johnny is a short 11-year-old boy with documented growth hormone (GH) deficiency resulting from a brain tumor. His parents are of average height. His predicted adult height without GH treatment is approximately 160 cm (5 feet 3 inches).
>
> Billy is a short 11-year-old boy with normal GH secretion according to current testing methods. However, his parents are extremely short, and he has a predicted adult height of 160 cm (5 feet 3 inches). (Buchanan 2000, 115)

The authors of *From Chance to Choice* assume that Johnny and Billy will 'suffer disadvantage equally if they are not treated. There is no reason to think the difference in the underlying causes of their shortness will lead people to treat them in ways that make one happier or more advantaged than the other'. (Buchanan 2000, 115) Although Johnny obviously stays short because of an illness, Billy does not. No biomedical malfunctioning is measured to cause his predicted shortness. It would be awkward to call Billy ill, just because he will be shorter than the average male person.

Other examples can be found in the field of reproduction as we can see in the next case:

> Mary is a lesbian woman of 28 years old. She and her partner Clare have been together for six years now and they both feel a strong wish to have children. Mary speaks of her biological clock ticking. She also knows how much a grandchild would please her mother, who was not too happy to hear that Mary was a lesbian. Furthermore, Mary and Clare often have to listen to their friends who all had children during the last few years. Those friends often tell them how sad it is that they have to miss this joy. The couple understands that they have only a few years left to try to have children. They hope to find a sperm donor and to become pregnant through reproductive technology methods.

Obviously, there is no illness preventing Mary and Clare from having children together. There is no biomedical malfunction, but they cannot conceive a child together because they are both women. However, although it is not a case of illness, these women experience the same problem as infertile women. Whether caused by medical indication (such as a blocked fallopian tube) or by social indication (such as the lack of a male partner), these women can suffer from the inability to conceive a child of their own.

These examples show that 'illness' is not an appropriate term for all cases in which people's well-being is at stake, even if the suffering involved is equal to cases where we can speak of illness and the alleviation of the suffering could be reached through the same methods.

One could of course consider the use of the term 'illness' for all cases of absence of health or well-being. This would mean an even further medicalization of social life than we already have in our society nowadays. Furthermore it would not clear up the moral debate. Calling Billy, Mary, or Clare 'ill' does not bring us any nearer to the problem they experience, which mainly has a social character, not so much a medical one. It seems more appropriate to acknowledge that their suffering equals the suffering of those who do have a diagnosed illness.

I mentioned above that the term 'needs' as an alternative for 'suffering' is more commonly said to evoke moral responsibility. Needs, however, is a very broad term. Nussbaum, for example, made a distinction between primary needs and secondary needs based on the core capabilities that are necessary to live a human life with dignity (Nussbaum 2006). If closely scrutinized, the distinction between primary needs and suffering will not be great. The use of the word 'suffering', however, has some other implications. First, it brings us to a moment that precedes our speaking about needs. Suffering concerns the core experience of a person who might not yet know what she needs. And second, whereas there are needs that do not necessarily oblige others to satisfy those needs (for example secondary needs), suffering always calls for care, whether by alleviating the cause of suffering or by just supporting the person who suffers.

Suffering and the Problems of Using Suffering as a Moral Compass

To speak of suffering seems to be problematic in the medical field. Eric J. Cassell (2004) claims that 'the relief of suffering is considered one of the primary ends of medicine by patients and the general public, but it is not by the medical profession, judging by medical education and the responses of students and colleagues' (31). Cassell emphasizes that physicians are primarily concerned with the physical, and that medical and social literature mostly explain 'suffering' in connection to pain. But pain and suffering are not synonymous. Physical pain does not have to lead to suffering and suffering does not only consist of pain, although pain can be a large factor in suffering. Cassell describes suffering as follows: 'Suffering occurs when an impending destruction of the person is perceived; it

continues until the threat of disintegration has passed or until the integrity of the person can be restored in some other manner' (32). Suffering is experienced by people. A person is not merely mind, but consists of many facets. Cassell sums up: a person has a past with life experiences, a family, a cultural background, roles, relationships with others, a relationship with himself or herself. A person is a political being, people do things, a person is unaware of some things happening to her. A person has regular behaviours, a body, a secret life, a perceived future, and a transcendent dimension. Suffering occurs with the (impending) destruction of one or more of these facets and when the intactness cannot be maintained or restored (36-43). The integrity of a person as a whole is at stake.

This comprehensive concept of suffering can make physicians sceptical about their task to alleviate suffering in general. In part this is with good reason, for how should they offer care when people lose a relative or their job? However, only emphasizing physical conditions has a risk of overlooking important facets that undermine physical or mental health and contribute to personal suffering.

To use this understanding of suffering in the context of ethics raises several problems. How to define when people suffer? How to know what aspects of a personal life cause suffering and how to relieve this suffering? Some people say they suffer when we would not expect them to, whereas others deny that they suffer in situations from which we would expect them to. We should also consider that 'suffering' is a loaded term and that many people will not admit that they suffer. Can we use such a subjective experience as a moral compass? Although suffering is person-related, we can recognize factors in human life that sooner evoke suffering than others. Physicians, psychologists, and pastoral workers are specialized in finding these factors in their field of work. But it is not possible to make general claims about suffering. Only the context of the person involved, and if possible her own opinion about it, can show whether a person suffers, whether facets of her personhood are harmed.

If we think suffering is important in the context of moral responsibility, we have to acknowledge there can be no general rules that define when moral responsibility has to be taken. One of the tasks of ethics should be to explore which factors in life cause personal suffering, and analyzing the role of several actors and social practices that influence these factors.

Body-Related Values

In the context of the enhancement debate at least one group of factors that cause suffering seems to be neglected, namely 'body-related values'. Different values are related to our bodies, depending on culture and period of time. Roughly we can divide body-related values into three categories:

First we can think of values that influence the evaluation of our bodies. According to these values we consider ourselves or other people healthy, attractive, or beautiful. Those values for example mark whether we have desirable bodies and whether we consider ourselves as being a real man or woman.

Second, body-related values can be values that influence the evaluation of ourselves in general. With this I do not want to make a distinction between our bodies and ourselves as if our bodies do not belong to ourselves, but in the first category the body-related values are directly aimed at the body as a specific part of ourselves, while the second category is more general and focused on character or moral evaluation of the person as a whole. Eve Ensler provides an example of this second category by speaking about herself: 'I have bought into the idea that if my stomach were flat, then I would be good, and I would be safe' (Ensler 2004, x). People connect personal values to bodily appearances: when a person is thin she is good. When she is fat, she is bad and lazy. A tanned skin is a sign of health and wealth. A trained body shows a person to be disciplined.

Third, other values we adopt can be body-related. The wish for having children is body- related, because bodies have to come together to realize this wish and a woman's body has to carry the child for nine months. In the case where reproductive technology is used, bodily interventions are performed in order to fulfill the wish for a child. Values of performance can also be body-related, when the body has to be trained and put on a diet to obtain the best performance. Another example of a body-related value in this category is the wish to have control over life. If a society highly values a control over all aspects of life, this will also concern the body, for instance by controlling the aging process.

These three categories overlap and influence each other. It is hardly possible to categorize a value in only one of the categories. The three categories mainly show the different kinds of influence body-related values can have.

If we look at the first case described above, we can see how such culturally determined body-related values can cause suffering. For example, we assume that both Billy and Johnny will not meet concrete physical dis-

advantages like pain or dysfunction from their being short. But they will both most likely encounter comparable practical and social discomforts. We can find examples of this at the Short Persons Support's website:

> Research has shown that short men have fewer opportunities for romantic relationships, have fewer children, and on average are paid less. Finding adult fashion clothes is difficult. Short women report that they are not taken as seriously as their taller peers (www.shortsupport.org, 29-08-2006).

Some of these situations can cause suffering when social practices push people into situations they cannot integrate with their self-image. Although we assume that both Billy and Johnny suffer equally, because they will both stay short, this assumption is too easily made. Whether they will suffer is dependent on many circumstances. Perhaps one of them lives in an environment that teaches the boy to cope with his shortness, to be self-confident, and maybe he will meet other short people and in that way find comfort.

An Ethics of Care

If we think that it is a moral responsibility to respond to human suffering, as in fact all ethical theories defend, there needs to be an attentiveness to recognize suffering. Such attentiveness is a core concept of an ethics of care. Feminist ethicists, who have developed different kinds of care ethics, make the attentiveness to a person's needs the centre of their ethical theory. Attentiveness to needs is an important aspect of the concept of care. Nel Noddings places emphasis on this attitude of caring:

> Caring involves stepping out of one's own personal frame of reference into the other's. When we care, we consider the other's point of view, his objective needs, and what he expects of us. Our attention, our mental engrossment is on the cared-for, not on ourselves (Noddings 1984, 24).

Although it is common in care ethics to speak of needs, I prefer to use the word 'suffering', for reasons mentioned above. If I do use the word 'needs', I use it related to suffering, as those needs that aim to relieve or prevent suffering. Of course, caring does not only occur in the context of suffering. If a woman cares for her child, her care will in general not be seen

as a reaction to suffering. However, her care will prevent her child from suffering, even if this will not explicitly be her conscious motivation to provide care. By caring we relieve or prevent suffering.

What is care? The *Encyclopedia of Ethics* describes care as a distinct moral sentiment – an emotional attitude embedded in a relationship with another person. 'Caring for another individual involves a concern for the other's well-being' (Becker 2001). This description of care, however, seems to be too narrow. Caring does not only consist of the concern for another person. Care ethicists have described 'care' as both an attitude or value and a practice. Caring without action is not real care. One could not say: 'I care for my children' without being prepared to actually provide them care. Such an inconsistency would immediately question the value of care. Daniel Engster describes caring as a practice aimed at helping individuals meet their basic needs, developing and maintaining basic capabilities, and living free from suffering as much as possible (Engster 2005). Examples of caring practices are child raising, educating people, nursing wounds and cultivating social relations. Although care ethicists have put the attention on caring practices, Virginia Held urges that '[M]oral theorizing is needed to understand the practices and to reform them' (Held 2006, 37). Many practices are not seen as caring practices. In this paper we question whether the use of enhancement technologies could be regarded as a caring practice.

Caring can only take place in the context of relationships. People care for other people. The central aim of an ethics of care is to determine the conditions of good caring relationships, with others but also with oneself. However, standards for a concept of care cannot be found in abstract principles or rules guiding us what good care should look like, which is congruent with the context-specific character of suffering. Rather, values of care can shape a framework showing us what caring relationships look like. Care ethicists motivate to establish a mutual caring relationship between the caregiver and the cared-for. 'Caring is a relation in which carer and cared-for share an interest in their mutual well-being' (Held 2006, 34-35). Providing care is therefore informed by the contexts of both the cared-for and the caregiver. Good care is only possible if caregivers are attentive, but also when care receivers are open to receive care and to support their caregivers as far as possible. The task of caregiving is often very difficult and takes a lot of energy from the caregiver (Kittay 1999; Levine 2004). Care receivers can therefore support those who offer care by not demanding too much from them.

Critics of an ethics of care claim that care ethics cannot offer any con-

tent because care does not mean anything else than a general term such as 'good'. If we say that we have to care about X, we do not yet know what we should do (Reich 1978). It is not correct to say that 'caring' is an empty concept. Caring attitudes and practices can be verified by affirming that they are attentive for needs, aimed at the other or oneself, part of mutual relationships and informed by the context of persons as a whole (including the body-related values). Caring attitudes and practices relieve or prevent suffering, which is defined as an impending destruction of the (integrity of a) person. Suffering shows when care is needed and when it is our moral responsibility to care.

So we can determine when care is called for and we have set the conditions care needs in order to form good caring relationships, but as for content we still do not know what good care is exactly, because good care is not based on rules and principles but is directly context-related. This can be seen as a problem, as most ethical theories wish to provide clear answers and boundaries. At the same time it can be seen as a big advantage for ethical consideration, because it offers openings to particular contexts, personal experiences, and creative thinking. Although I agree with the last option, I do recognize the problematic aspect of a concept of care that is too open. Without limiting it, through the addition of rules or principles, I hope to offer some guiding tools to recognize good care. This I will do by introducing the theological concepts of love and redemption.

Love

Although 'love' is a central aspect of social behaviour, modern ethicists hardly reflect on the topic of love, for several possible reasons. Love seems to be the opposite of rationale, and could often even be considered as non-rational. Love can be seen as an individual emotion, and love is mostly associated with romantic love. For feminist theologians the latter has been a reason to avoid speaking about love. They stressed that in the name of love power relationships were justified and they preferred to rethink concepts of a relationship, by using other terms. The absence of thorough reflection on love can be considered an inadequacy in the field of ethics, as our understanding of what love is influences our social relationships. What is considered to be love? Who do we love, who may we love, how do we act out of love? How does love for another influence our moral considerations?

The Protestant debate about love (agape) has emphasized the concept of other-regard in contrast with self-regard. This distinction was initiated by Anders Nygren's *Agape and Eros* in which Nygren understands Christian love as moving in two directions: God and the neighbor (Nygren 1953). This is in contrast with natural self-love, which is presented as a morally negative quality (Andolsen 1981). The grounding for Nygren's understanding of love can be found in the traditional understanding of love through the Christological explanation of the crucifixion of Jesus, which understands Jesus' self-sacrifice at the cross as the salvation of humankind. This selfless love of Christ should also be present in the actions of his followers. Feminists have criticized this understanding of agape because it did not do justice to women's experiences. They described women as already being inclined to self-abnegation, having serving roles and not being able to develop themselves. In contrast to the distinction between self-regard and self-sacrifice they offered the concept of mutuality (Andolsen 1981). Focusing on mutuality, friendship, kinship, and relationships, they avoided speaking about love.

In this context, however, I prefer to speak about love. Kinship and friendship refer to particular relationships and although it is possible to transfer the characteristics of kinship relationships to broader contexts of social behaviour, the Christian concept of love is appropriate in this context precisely because it is not limited to particular relationships. Christians are called to love even those who do not return love, because it has no merit to love those who give love in return. The value of love can be found in its general character.

Interestingly, the Christian concept of love seems to correspond with the concept of care in many aspects. Both concepts share the necessity of relationships and mutuality. Just as care requires attentiveness, love is not possible without an open attitude towards the other and the self. Like care, love is not only a value, it is also a practice. Love directly implies action. But if care and love are so much alike, why bother speaking about love? A theological concept of love can offer care ethics some values that are less obviously derived from the concept of care.

Care ethicists emphasize the importance of an attentive attitude for needs. Attentiveness can still be understood as being rather detached, involving no particular emotions of the caregiver. Love on the other hand requires that the loving person is deeply moved. Love is a deep affection. The Protestant ethicist Margaret Farley uses the concept of compassion to refer to this being moved by the other (Farley 2002). But compassion directly refers to already existing suffering, not so much the suffering that

needs to be prevented. We do not feel compassion for children we care for, we love them. A person who loves allows herself to be deeply moved. Furthermore, the Christian concept of love is always placed in a larger context. The love between people is a reflection of God's love for people. Our love is a part of the divine love, which binds human love together as a network aimed at redemption.

Love differs from care in one important aspect. Love cannot be a moral responsibility. We cannot be obliged to love, we can only be inspired to love. We might consider calling it a religious or spiritual responsibility. Anyway, love can function as a strong motivation and inspiration to be attentive and provide care.

Redemption

Susan Frank Parsons in the *Cambridge Companion to Feminist Theology* writes about redeeming ethics based on the *Dialogue* with God of St Catherine of Siena (Parsons 2002). Catherine's prayer shows Parsons how knowledge of God's goodness is followed by love and the desire to be turned into this goodness. In this movement from knowledge of God's goodness towards the desire to be turned into this goodness Parsons recognizes the intrinsic connection of ethics with redemption. The theological concept of redemption traditionally has been connected to Jesus' crucifixion. The tremendous love of the Son for his Father and the world made him accept the cross. His crucifixion and resurrection counted as the salvation of humankind. Radford Ruether summarizes it as:

> For traditional Christianity redemption means the reconciliation of the fallen soul with God, won by Christ in the cross, applied to the soul in baptismal regeneration, and developed through the struggle to live virtuously sustained by grace. Salvation is completed after death in eternal contemplative union with God (joined by the spiritual body in the resurrection). (Ruether 1998, 273-274)

This understanding of redemption has been forcefully criticized by feminist theologians, for it did not change the actual oppressed situation of many women. In modern feminism redemption shifts from otherworldly hope to this-worldly hope, according to Radford Ruether:

Redemption is not primarily about being reconciled with a God from whom our human nature has become totally severed due to sin, rejecting our bodies and finitude, and ascending to communion with a spiritual world that will be our heavenly home after death. Rather, redemption is about reclaiming an original goodness that is still available as our true selves, although obscured by false ideologies and social structures that have justified domination of some and subordination of others. (Ruether 1998, 8)

The example of this original goodness feminists find in the life of Jesus, and not so much in his crucifixion. Jesus' life is paradigmatic because it shows ways to dissent from oppressive systems, to take the side of the oppressed, to follow a praxis of egalitarian relations and to provide care. Redemption is no longer regarded as one savior's sacrifice and a hope for salvation in a future world. Redemption becomes a responsibility here and now, because we can be the source of redemption for others and ourselves.

Changing Ourselves

Why do our moral standards often change when bad things happen to our loved ones, or to ourselves? One could call it hypocrisy, but it seems more appropriate to acknowledge that our moral opinions are better informed about the context when we consider cases that are near to us. It is not too difficult to form abstract principles and rules about moral questions that do not concern situations we know much about. An ethics of care tries to bring distant cases nearer to us by articulating the importance of particular contexts. A Christian notion of love can inspire us to open our eyes for the needs and sufferings of other persons, being aware that taking moral responsibility can create moments of redemption.

In the context of enhancement technologies an emphasis on suffering can lead to moral responsibilities that become ambiguous when we only focus on the boundaries between medical treatment and enhancement. An ethics of care focused on human suffering shows how particular situations determine whether people are in need of care. Attentiveness for those needs makes apparent that some people who are ill do not suffer, while others who are not ill do suffer. People who wish to enhance their bodies can suffer from social values that limit their well-being to a large extent. From the perspective of care ethics their suffering cannot evoke

other responsibilities compared with equal suffering caused by illness.

A theology of love and redemption can remind us that attentiveness to human suffering can open us up to those we do not personally know, or whose suffering we do not understand. Through taking moral responsibilities, by creating good relationships of care, we can offer each other redemption.

By no means would I argue that enhancement technologies can relieve all human suffering caused by social values. If we look at the impact of some body-related values that cause suffering, we might rather consider whether we can remove the social pressure from those who do not conform to the average norm. But before we arrive at a society that can reach such an ideal, there is a moral responsibility to provide care for those who suffer from social practices. The use of enhancement technologies could be one way of providing this care.

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Part Four

A MATTER OF ARGUMENT OR OF TRUST?

12   Religious Arguments in Political Decision Making

Patrick Loobuyck

Introduction

This contribution sketches the different political philosophical positions in the debate about the use of religious arguments in political decision making. We distinguish exclusionism from strong and weak versions of inclusions, and argue that from a deliberative democratic perspective, strong inclusionism gives us the most consistent approach to this subject. We will not only see that most arguments against inclusionism fail; it also seems that the critics of strong inclusionism work with an abstract notion of moral subjects and a problematic concept of autonomous morality.

The Political Philosophical Landscape: Exclusionism, Weak and Strong Inclusionism

Nowadays, it seems 'not done' in our secular Western European societies to use religious arguments in the political sphere. When Christians or Muslims publicly condemn the law permitting euthanasia or same-sex marriages for religious reasons, many people call it a threat to democracy and a violation of the principle of the separation of church and state. There is an increasing unwritten consensus that religious doctrines and institutions should play no role in political decision making. Many Christian democratic politicians also seem to accept this view. They acknowledge that religious beliefs can inspire their political engagement but in their political choices and in the public presentation of arguments that support these choices, they avoid appeals to their religious background.

We can call this standard understanding of public reason the 'exclusive view' (cf. Rawls 1993, 247; Perry 2003, x; Boettcher 2005, 499).

Versions of this exclusive view have been defended by liberal philosophers such as Charles Larmore, Bruce Ackerman, Richard Rorty, and Robert Audi. For Audi, religious people should be guided by a principle of secular rationale and of secular motivation in the political realm. In the attempt to justify political beliefs and actions, 'a commitment to a free and democratic society requires that one have, and be sufficiently motivated by, adequate secular reasons' (Audi 1989, 293; also 2000, 86ff.) Several authors defend a kind of 'conversational restraint' as a necessary condition to keep the political dialogue going. Larmore (1987, 53) argues that 'in the face of disagreement, those who wish to continue the conversation should retreat to *neutral ground*' and Ackerman (1989, 16) goes even further, when he writes that 'we should simply *say nothing at all* about this disagreement and put the moral ideals that divide us off the conversational agenda of the liberal state'.

However, most of the liberal political philosophers argue now for an approach that is more inclusive. The debate now mainly focuses on questions about the extent to which religious discourse and argument should be included in political decision making. (cf. Boettcher 2005, 497) It is interesting to see how some authors explicitly changed their mind about the subject over the years. Michael Perry for instance defended an exclusionist position in *Love and Power* (1991) and a more moderate exclusionist position in *Religion in Politics* (1997), but in *Under God?* (2003) he defends a form of inclusionism. Also Jürgen Habermas changed from a resolutely secular perspective (1962) to a post-secular perspective with a broad-minded acknowledgement of religion's special niche in the spectrum of public political debate (2006). Even Richard Rorty, one of the most famous exclusionist liberals, gives a restatement of his 'hasty and insufficiently thoughtful' ideas that he wrote in his article with the well-known title 'Religion as Conversation-stopper'. In that article Rorty (1999, 169) wrote approvingly of 'privatizing religion – keeping it out of [...] the public square', making it seem bad taste to bring religion into discussion of public policy. But in his 'reconsideration' he doubts if good citizenship requires us to have non-religious bases for our political view and he acknowledges that it is false that religion is 'essentially' a conversation-stopper. Rorty's view can now be summarized as: 'What should be discouraged is *mere* appeal to authority. [...] Citizens of democracy should try to put off invoking conversation-stoppers as long as possible' (Rorty 2003, 147-8; see also Stout 2004).

John Rawls also modified his position considerably. Unlike some of his critics suggest (cf. Quinn 1997; 2001), exclusionism was never defended in print by Rawls, but he acknowledges that at first he inclined to the more restrictive exclusive view (Rawls 1993, 247 n. 36). In the first edition of *Political Liberalism*, Rawls defends the idea of public reason based on reasons that can be agreed to by all reasonable people, irrespective of which comprehensive (religious or secular) doctrine they affirm. The ideal of citizenship imposes a moral 'duty of civility' to be able to explain to one another how their political choices and actions can be supported by the political values of public reason (Rawls 1993, 217). But Rawls makes a difference between the well-ordered society wherein the public reason must follow the exclusive view, and the nearly well-ordered societies and not well-ordered societies wherein the ideal of public reason allows the inclusive view. So in certain (unjust) situations it may be justified for citizens to appeal to comprehensive (religious) reasons 'provided they do this in ways that strengthen the ideal of public reason itself' (Rawls 1993, 247ff). Later Rawls revises his position. In the introduction of the paperback edition of *Political Liberalism* (1996) and in his article, 'The Idea of Public Reason Revisited' (2001), he more clearly stresses that the ideal of public reason should be applied only in the discourse of judges, government officials, and politicians when discussing constitutional essentials and matters of basic justice. The idea of public reason does not apply to the background culture (Habermas's public sphere, 1962) like civil society and media. (Rawls 2001, 134; 1996, I-Ii) Moreover, Rawls (2001, 152ff; 1996, Iii) introduces the 'wide view of public political culture'. Now comprehensive doctrines 'may be introduced in public reason at any time, provided that in due course public reasons [...] are presented sufficient to support whatever the comprehensive doctrines are introduced to support'. Rawls refers to this as *the proviso*. So religious discourse is only allowed as supplementary in public reason. The wide view of public reason is still a type of 'weak inclusionism' because it does suggest that on some occasions restraints on the appeal to religious and other comprehensive doctrines are warranted. (Boettcher 2005, 500) In fact the wide view of public reason cannot allow public justifications that rely *solely* on religious justification and cannot be translated in public political reasons.

The latter is defended by the so-called strong inclusionists like Christopher Eberle, Jeffrey Stout, Nicholas Wolterstorff, Paul Weithman, John Neuhaus, and Veit Bader. They argue that citizens are morally permitted to offer exclusively religious arguments in public debate. One of the most powerful statements of strong inclusionism is presented in Eberle's

Religious Convictions in Liberal Politics. He criticizes the authors who defend what he calls 'justificatory liberalism' (from Rawls and Gutmann to Ackerman and Audi) for their failure to present an adequate account of why religious believers should avoid relying solely on their religious convictions in their political choices and activities.

Also the defenders of deliberative democracy tend to be more inclusive than their colleagues who defend the standard liberal democracy. Since the early 1990s the so-called 'deliberative turn' has preoccupied the debates concerning democratic theory. Authors such as Jürgen Habermas, Seyla Benhabib, James Bohman, and Joshua Cohen had emphasized that democracy is much more than the aggregation of preferences into collective decisions through devices such as voting and representation. 'Under deliberative democracy, the essence of democratic legitimacy should be sought instead in the ability of all individuals subject to a collective decision to engage in authentic deliberation about that decision. These individuals should accept the decision only if it could be justified to them in convincing terms' (Dryzek 2000, v). Moreover, deliberative democratic theory works with another view on the 'moral self' that participates in public deliberations than other liberals. Rawls, for instance, does not view democratic citizens as 'socially situated or otherwise rooted, that is, as being in this or that social class, or as having this or that comprehensive doctrine' (cf. Rawls 2001, 171). In deliberative democratic theory citizens are not the Kantian, free-floating, abstract, generalized, equal, and reasonable subjects but concrete and unique individuals 'with a certain life history, disposition and endowment', and therefore 'there can be no coherent reversibility of perspectives and positions unless the identity of the other as distinct from the self, not merely in the sense of bodily otherness but as a concrete other, is retained' (Benhabib 1992, 10; 158ff). It is not surprising that deliberative democratic theorists reject the path of conversational restraint and argue for a more open, unrestricted deliberation. Shared political values (part of the overlapping consensus of comprehensive doctrines) are important, but the input in public and political deliberation cannot be restricted to those values. Contradicting Ackerman, Benhabib writes that citizens must feel free to introduce 'any and all moral arguments into the conversation field'. A deliberative model of democracy is therefore much more interested in 'background cultural conditions' and the contribution to public reason of comprehensive doctrines, because 'politics and political reasoning are always seen to emerge out of a cultural and social context' (cf. Benhabib 1992, 95; 1996, 74-77).

In sum, in the debate about the 'neutrality of public reason' there are many liberal perspectives and (sometimes changing) positions and the discussion is still going on. In our overview of the liberal landscape, we made a distinction between exclusionists and (strong and weak) inclusionists. Unfortunately, there is no standard terminology in the literature and it is not always clear for each author to which category he or she belongs. Some call Audi an exclusionist, while others (even Audi himself, cf. Audi 2000, 69-78) would like to be a weak inclusionist. Especially about the (changed) position of Rawls there was, and is, a lot of discussion (cf. Weithman 1994; 1997; 2002, ch. 7; Thiemann 1996; Habermas 1995).

However, we think that the distinction can be seen as follows: weak inclusionism not only acknowledges that religious arguments, motivation and justification are relevant for the person who defends a certain position (this personal relevance will not be denied by many exclusionists), the weak inclusionists are also convinced that (in some circumstances) religious arguments and reasons are relevant to the public and political deliberation itself. While weak inclusionists (in some circumstances) see the instrumental value of world views and comprehensive (religious) doctrines, strong inclusionists argue that citizens should not be discouraged from basing their political decisions and arguments solely on religious grounds because it is impossible and in essence undesirable that public reason makes no place for the contribution of comprehensive doctrines.

Arguments For and Against Strong Inclusionism

In the literature many arguments are given to reject (strong) inclusionism. Most of the arguments are focused on the exclusion of *religious* arguments: they would be conservative, unreasonable and uncritical, religious arguments would undermine the political stability of diversified societies, religious arguments would function as a conversation-stopper and would undermine the possibility of consensus. Religious arguments would be unintelligible for people who do not share that religion and as such the use of religious arguments would be a lack of respect for other participants in the public dialogue. Moreover nobody wishes that fundamentalism dominated public decision making. An extensive and detailed critical review of all these arguments is beyond the scope of this chapter, we only make some general remarks.

Religious arguments are not always uncritical and unreasonable. The religious life of people is much more than obedience to divine authori-

ties. Let it suffice to mention the important Thomistic tradition that gives place to reason (*lumen naturalis rationis*) and individual conscience in Christian moral philosophy. This tradition wherein morality is accessible, at least in principle, to human reason, is until today an important part of the official Catholic doctrine. (cf. Riordan 2004, 191; Perry 2003, 67; Vatican I's *Dei Filius* (1870)) Here it is important to make a distinction between a political position that is inspired by religious commitments, beliefs, and ideas, and religious arguments for that position. People can take a position against abortion, torture, or capitalism because of their religious beliefs, but at the same time they can try to give us rational (secular or political) arguments to defend that position. (Gascoigne 2001, 188-211; Rawls 2001, 152ff.) Most people do not have problems with the idea that religious beliefs have an influence upon political positions as long as the justification can be given in neutral terms, independent of the religious beliefs itself. As such we must be aware that some religious positions are disavowed not because they are religious but because they are (sometimes indeed in a reactionary way) conservative. But there are many religious positions that are 'very human' and not conservative. (cf. Weithman 2002, 5, ch.2) We can think about the role of religious arguments in the Civil Rights Movement (Martin Luther King) and abolitionism, but also about the religious position toward irregular migrants, capitalism and ecology. With these 'politically correct positions', the religious contribution is much less controversial. (cf. Rawls 1993, 249-50) Sometimes church leaders are even praised when they take a stand that pleases political leaders, but in many other issues they are (hypocritically) rebuked. (cf. De Dijn 2003, 293)

What to do now with religious arguments? First it must be clear that not all religious arguments are conversation-stoppers, and not all religious arguments are used in a fundamentalist way. In many cases, the religious voice can be seen as a contribution to the ongoing conversation about moral, political issues. Moreover, nobody will disagree that there are also some secular arguments that can be used in an authoritative way. The secular use of Marx, Darwin, or the idea of absolute property rights can also put a brake on conversation. So why should we say that religion has to shape up without also saying that Marxism, Darwinism, and libertarianism has to shape up and ought to be privatized? 'Why isn't sauce for the goose, sauce for the gander?' (cf. Wolterstorff 2003, 136-7; Rorty 2003) Although religious contributions to the public discussion were, and are, sometimes dogmatic, there is no reason to believe that religious contributions are never deliberative. As Michael Perry (2003, 42) mentioned: 'at

its best, religious discourse in public culture is not less dialogic – not less open-minded, not less deliberative – than is, at its best, secular discourse in public culture. (Nor, at its worst, is religious discourse more monologic – more closed-minded and dogmatic – than is, at its worst, secular discourse.)'

It can be true that it is easier to reach consensus when all people argue in neutral, political terms, independent of any comprehensive world view, but this is not a sufficient argument to keep different religious arguments out of political debate. First, reasonable deliberation cannot guarantee consensus, and our democratic political system is important because it gives us the best option so far to cope in a peaceful and civil way with these unavoidable moral and political disagreements (cf. Gutman and Thompson 1996, 26). Pluralism and (political and moral) disagreement are the very essence of our democracy's right to exist. With Wolterstorff we can ask: 'What's so bad about reaching an impasse in political discussions?' We can try to seek deliberative consensus, but democracy allows more than that. We can try to make some political deals or take a vote. As long as those who lose the democratic game think it's better to lose than to destroy the system, democracy survives. (cf. Wolterstorff 2003, 135-7)

Moreover, within one religious doctrine, there is often a degree of moral disagreement and some Christians may be more in agreement with a non-believer on a certain moral issue than they are with another believer (Kole 2002, 254). Religious plurality is, therefore, not the only cause of contemporary moral plurality, and the other way round, the use of different religious arguments does not necessarily prevent moral consensus with an atheist. People can argue from within their different comprehensive views and draw on the different religious, philosophical, and moral grounds those provide, but still an 'overlapping consensus' is possible. Maybe the justification for human rights or a conception of justice is incommensurable, but not the political position about human rights and justice itself (cf. Wong 1989; Taylor 1999; Rawls 2001, 147-8; Bader 1999, 617; Gascoigne 2001, 199).

Some authors suggest the idea that religious pluralism in the public debate could undermine the political stability. They then refer to the crusades, the Thirty Years War, the Bosnian or Palestinian conflict and terrorism. It is true that *in some (historical) circumstances* the intrusion of religion into the political sphere can be very inflammatory and can continue deep and problematic divisiveness, but this provides us – in contemporary Western Europe and the US – with no reason to exclude religion from the public and political debate (Eberle 2002, 158ff). Nowadays western people

who use a religious argument are not necessarily dangerous people who want to eliminate the other. And of course secular (antidemocratic, illiberal) opinions and discussions can also undermine political stability and generate problematic division (cf. Chaplin 2000, 628, 641; Wolterstorff 1997b, 80; Perry 1997, 45; 2003, 40, 48-51). So the point is that democracy cannot allow antidemocratic commitments that lead to political chaos, war and destruction – therefore, laws against racism and hate speech can be justified – but this is not a sufficient argument to privatize religion in all circumstances.

One of the most important arguments in the debate about the place of religious arguments in the public sphere is the idea that people have to argue with each other in reasonable and neutral terms out of *respect* for others as free and dignified individuals. Respect for other people with other world views requires the use of arguments that everybody can share, understand and endorse (cf. Larmore 1987). With Gutmann and Thompson, Rawls defends 'the principle of reciprocity': it is reasonable to think that other citizens with other comprehensive ideas about the good life might also reasonably accept the reasons we offer for our political actions and choices (Rawls 2001, 136-7; Gutmann & Thompson 1996, chs. 1-2). However, the standard approach that respect needs a kind of 'neutral dialogue' is not unproblematic. Of course the norm of equal respect is essential for liberalism and indeed to treat an individual as a person is to offer him an explanation for our political and moral opinions, but it is not clear that this explanation has to be neutral. Galston (1991, 108-9) remarks that a respectful explanation does not necessarily appeal to beliefs already held by one's interlocutors. He suggests to show respect for others by offering them, by way of explanation, what we take to be our best reasons for acting and thinking as we do. Also Eberle and Weithman argue at length that an attitude of respect for one's fellow citizens as equal and free individuals does not require 'the exercise of restraint'. The use of religious convictions in political decision making does not necessarily exclude mutual respect in a democratic liberal framework (cf. Eberle 2002, 71, ch. 4&5; Weithman 1997; 2002).

Moreover, it seems not at all true that people with different world views cannot understand each other when they argue in terms specific for their world view. Socialists and libertarians use a radically opposite conception of freedom, but they can reasonably discuss with each other the themes wherein freedom is involved. The same is true for religious perspectives. It is not true that there is nothing to be done for secular atheists with what Christians or Jewish persons argue from their specific religious perspec-

tive. (cf. Habermas 2006; Chambers 2007) So why would Christians not offer a Christian perspective and atheists their secular perspective of, for instance, human life and ecology? As such, allowing people to use religious reasons is not a form of disrespect; it is rather a way in which one can show respect for another person in his or her particularity. 'Real respect for others takes seriously the distinctive point of view *each* other occupies. It is respect for individuality, for difference' (Stout 2004, 73; see also Wolterstorff 2003, 135; 1997b, 110ff). Also Rawls (2001, 154) wrote that 'it is wise, then, for all sides to introduce their comprehensive doctrines, whether religious or secular, so as to open a way for them to explain to one another how their views do indeed support those basic political values.'

So far, we have just given some negative arguments for strong inclusionism by showing how the arguments for exclusion fail. There are also some positive arguments for strong inclusionism in deliberative democracy. Some political issues cannot be discussed in a neutral way. Obvious examples are abortion, euthanasia, and the bioethical discussions about (human) cloning (cf. Roetz 2006). It is not difficult to show that the discussion for and against abortion rights cannot be neutral with respect to the underlying moral and religious controversy, and therefore must engage rather than avoid substantive moral and religious doctrines at stake. (Sandel 1996, 21; Hauerwas 1981, 196, 212) The political discourse on birth and death, fertilization, embryos and parenthood, but also on poverty, distributive and global justice and ecology is not (and cannot be) value-free. Political and democratic deliberation would be redundant if a neutral scientific discussion resolved all the tensions and antagonisms. As such, in some (important) issues it is undoubtedly an asset when the voices of different religions and world views are heard in public and political debate.

The most powerful argument has to do with the concept of the self that is used. Once we agree that citizens who participate in political deliberation are not the abstract, reasonable subjects as traditional liberalism proposes, it becomes clearer why we cannot keep religious arguments out of public reason. Religions and world views are constitutive elements for the moral identity and it is impossible to make abstraction of these elements when people enter the public space. With Sandel (1996, 18) we can ask if it is possible that 'however encumbered we may be in private, however claimed by moral or religious conventions, we should bracket our encumbrances in public and regard ourselves, *qua* public selves, as independent of any particular loyalties or conceptions of the good'. For believers who

take their faith to be among the very most significant features of their being, how can we expect that they act and argue 'pretending' that they are not a Christian without violating their integrity? (cf. Weithman 1994, 8) Benjamin Berger (2002, 47) clarifies: 'From the perspective of the adherent, religion cannot be left in the home or on the steps of Parliament. The religious conscience ascribes to life a divine dimension that infuses all aspects of being. The authority of the divine extends to all decisions, actions, times, and places in the life of the devout.' Religion is not a 'hobby' – a private interest with no public policy implications. In other words, from the perspective of Christians it may be an 'existential necessity' to express religious moral beliefs in a public or political discussion (cf. Kole 2002, 251-3; Carter 1993, 54; Habermas 2006, 9; Wolterstorff 1997b, 105).

In fact the same is true for secular arguments, because it is a misunderstanding to think about *secular* reasons as *neutral* reasons. I agree with Rawls (2001, 143, 148) that secular reason is also 'reasoning in terms of comprehensive nonreligious doctrines'. Secular values, concepts and reasoning belong to a *particular* moral doctrine and are not independent of a *particular* comprehensive world view. As such, secular philosophical doctrines do not provide neutral public reasons. Quite often people seem to confuse secular and neutral reasons and believe that asking Christians to argue in neutral terms is asking them to argue in secular terms. This is not fair as it is possible that much of the Christian view will be lost in the translation, because much of the Christian view (e.g. about abortion) is not translatable in secular terms (cf. Hauerwas 1981, 212; Sandel 1996, 20-21; Greenawalt 1995, 83-84, 119-120). Moreover, the confusion between secular and neutral reasons conceals that *in fact* atheist humanists argue with their comprehensive terms and values while religious people may not do so. Again: 'Why isn't sauce for the goose, sauce for the gander?' The view often expressed 'that while religious reasons should not be invoked to justify legislation, sound secular arguments may be' (cf. Rawls's (2001, 148) formulation) is inconsistent and not tenable. Secularism is not the overarching neutral framework of public reason itself, but only one voice in political life, and it cannot be allowed to be the only one (Parekh 1997, 21).

The whole discussion goes back to the philosophical discussion about autonomous morality. The exclusive view presupposes that an autonomous freestanding morality – a morality that can be thought and justified independently of God, but also independently of any world view – is possible. Audi (2000, 139-41) is quite explicit on that matter: 'Liberal democracy, however, is committed, at least in its best-developed forms, to the

conceptual and epistemic autonomy of ethics. [...] It is not too much to ask of conscientious religious citizens [...] that they abide by the principles of secular rationale and secular motivation.' The idea of an independent morality is not only endorsed by atheists, also many theologians (Audi is also a Christian) have advocated an autonomous conception of morality (cf. Auer 1971; Fuchs 1973).

However, this autonomous conception of morality is highly problematic because our moral considerations are not fully independent of our world view. Once the limits of platitudinous morality are passed, moral systems and moral theories, both secular and religious, will reflect what Iris Murdoch called 'a vision of life' (Murdoch 1956; Mitchell 1980, 97-105, 146; Brody 1981). What we believe 'is' (ontology and metaphysics) has consequences for what we believe to be 'good and bad' (ethics). This is true for religious believers *and* non-believers. Moral beliefs are not 'metaphysically neutral'; they are intertwined in a wide reflective equilibrium with particular (scientific, metaphysical and/or religious) background theories about human nature and the nature of the world (cf. Gascoigne 2001, 190; Daniels 1979, 258-9; Nielsen 1988, 21-2). So, we agree with Mitchell (1980, 97-8) that it cannot be made 'a reasonable ground of complaint against a religious ethic that it involves metaphysical assumptions, for this is true of any system of ethics. It is a mistake to identify secular morality with "morality" *tout court.*' The consequence for public reason is clear: the appeal to religious-moral reasons cannot be forbidden for their metaphysical presuppositions, because the permitted secular reasons also have (sometimes more implicitly) such presuppositions. When moral questions are discussed in the public forum, it is impossible for people not to argue from within their own comprehensive views and not to draw on the religious, philosophical, and moral grounds that those views provide. We have to acknowledge that religiously grounded moral beliefs inevitably play a role in political deliberation on fundamental matters, so 'it is important that such beliefs, no less than secular moral beliefs, be presented in public political argument *so that they can be tested there*' (Perry 2003, 39). There are too many issues that cannot be resolved or discussed solely on the basis of commonly accepted principles and scientific knowledge, because the disagreement goes back to a deep conflict of values. It seems, then, that the choice for exclusionism leaves a long list of important political questions unaddressed (cf. Greenawalt 1988, ch. 6-9; Galston 1991, 113; Stout 2004, 88-91).

Deliberative Democratic Restraints on Public Reason

In the light of the deliberative democratic perspective and our rejection of autonomous freestanding morality, strong inclusionism is the best theory when thinking about religious arguments in political decision making. However, strong inclusionism is not an 'anything goes' view. Insofar as strong inclusionism goes together with an ideal of democratic deliberation, it must also accept certain requirements and conditions associated with a deliberative approach to political decision making (cf. Boettcher 2005, 512; Habermas 2006). Citizens must incorporate deliberative-democratic attitudes and practices. One of them is the 'duty of civility': (religious) citizens ought to explain their reasons and present public justifications for supporting political choices and positions. Citizens can be asked to do this, as much as possible, with political or public (instead of moral or religious) reasons that can be agreed on by all reasonable persons, irrespective of which comprehensive doctrine they affirm (cf. Rawls's (1993) idea of the overlapping consensus). However, citizens are not discouraged from basing their political decisions or arguments on a religious rationale *alone*, and in some political discussions it seems impossible to maintain 'a wall of separation' between religiously grounded moral discourse and the discourse that takes place in public political argument (Perry 2003, 43; Eberle 2002, 10; Bader 1999).

The democratic attitude means, at the least, that citizens will not support any policy on the basis of a dehumanizing rationale (such as racism or Nazism) that denies the freedom and equal dignity of their compatriots. 'The important thing, given the priority of democracy, should not be whether arguments are religious or secular but whether arguments, attitudes, and practices are compatible with the principles, rights, culture, virtues, and good practices of social, democratic constitutionalism' (Bader 1999, 602; see also Thiemann 1996, 89ff., 173; Wolterstorff 1997a, 1997b, 1997c). Religious or other comprehensive positions that would like to force everybody to live according to that particular doctrine (e.g. the position that all women have to dress in a certain covered way) are problematic, and most of the time not welcome on the democratic forum because they are moving toward reducing the (religious) freedom of other citizens (cf. Audi 2000, 87).

In short, we can say that the deliberative democratic perspective requires respect for the other, involvement in search of the better argument, an engagement in dialogue with the other and the acceptance of democratic decisions (especially when you consider the decision to be immoral). One

defining feature of deliberative democracy is that participants are ready for a rational transformation of their beliefs and preferences as a result of the reflection induced by political deliberation (Elster 1998, 1; Dryzek 2000, 31; Habermas 1992). An attitude of fallibility and mutual criticism is thus the basic requirement for every public and political engagement, also when it is based on strong religious commitments. The attitude of fallibility and mutual criticism is one of the most discussed conditions in the context of the use of religious arguments, because citizens who use their religion in the public dialogue are often characterized as people who 'regard themselves as bound to obey a set of overriding and totalizing obligations imposed upon them by their Creator' (cf. Eberle 2002, 183). Very often the critics of inclusionism think that all religious citizens are fundamentalists who are not open for the ideas of others and not willing to change their minds. However, this is not always what happens in reality. Religious people who participate as believers can also consider the arguments and criticism of other citizens with another mindset, and allow that other participants in the democratic deliberation make an evaluation of their reasons. Religiously committed citizens ought to be willing to learn from others and even change their commitments if given sufficient reason to do so (Eberle 2002, 102-8; Perry 2003, 39-44; 1988, 183; Waldron 1993, 817, 841-2).

This deliberative attitude also means that people should not uncritically rely on religiously grounded moral beliefs and must remain open to the criticism of other believers. For example, there is also widespread disagreement among Christians about many politically or morally contested subjects, like same-sex unions, the use of condoms, or abortion. Such disagreement should be an occasion for Christians to subject traditional beliefs to careful, critical scrutiny. This is especially true for the use of the Bible. The position that a citizen can use the Bible uncritically in a literal way, without any extra-Biblical information and in abstraction of human experience is 'obviously and straightforwardly indefensible' (Perry 2003, 55-97; Eberle 2002, 274).

Conclusion

From a deliberative democratic perspective, strong inclusionism is the best theory for thinking about the place of religious (and secular) comprehensive doctrines in public reason. Liberalism does not necessarily exclude the use of religiously grounded moral beliefs in public debate. With Michael Perry (2003, 44) we can conclude that it is not '*that* religious

convictions are brought to bear in public political argument that should worry us, but *how* they are sometimes brought to bear (e.g. dogmatically). But we should be no less worried about how fundamental secular convictions are sometimes brought to bear in public political debate.' It must be clear that strong inclusionism is not the same as the laissez-faire option. There are still the deliberative-democratic requirements, but these requirements are equally valid for religious as well as for secular participants in the political dialogue.

> All of them have to learn how to resolve the fundamentalist dilemma – namely, that in democratic deliberation and decision making, their 'truths' are no more than opinions among others. Instead of trying to limit the content of public reason by keeping all contested comprehensive doctrines and truth-claims out, one has to develop the duties of civility, such as the duty to explain positions in publicly understandable language, the willingness to listen to others, fair-mindedness, and readiness to accept reasonable accommodations or alterations in one's own view. (Bader 1999, 614; see also Wolterstorff 1997c, 145-7)

Political decisions should be neutral in their formulation of a proposition, but this does not exclude that there is some room for pluralism in the debate that precedes those decisions. From a democratic point of view there is no objection to religious political inputs, on the condition that citizens adopt a democratic attitude with regard to their own (comprehensive) views. Nobody can be excluded in virtue of the fact that he or she uses comprehensive doctrines to argue for his political choice. Only people who refuse dialogue and have no respect for other positions are a priori excluded from democratic decision making and put themselves outside the political community.

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13 The Knowledge Deficit and Beyond: Sources of Controversy in Public Debates

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According to many biotechnological scientists, controversies over agricultural biotechnology (or any kind of biotechnology for that matter) are characterised by a knowledge gap between the lay public and the expert scientists (e.g. Yankelovich 1991; Irwin & Wynne 1996; Hornig Priest 2001). It is often claimed that the difference between adversaries and advocates is overlapping the distinction between public and experts. Hence, in biotechnology science communication research, the public/expert gap has often been said to be an important, if not the most important cause for biotechnology controversies. According to these scientists, what ought to be done to solve this controversy is to minimize this gap. They claim that the public's lack of information or a lack of understanding is the dominant reason for this gap. The gap can be minimized by educating the public into becoming semi-experts.

The central question of this essay is whether it really makes sense to locate this lack of information or knowledge as the central source of the biotechnology controversy. Can it not be the case that the difference between the public's and the scientists' perspective on biotechnology is caused by wholly different kind of problem? This article evaluates the claim that the public's lack of information or understanding is the main cause for the biotechnology controversy. Although it appears defensible to claim that there really is a lack of information and understanding among the public, I want to suggest that there are alternative and more plausible sources of controversy. Perhaps we should direct our attention away from the field of the public understanding of science by focusing on the scientists' understanding of the public.

Knowledge Deficit

Most scientific risk communication is still grounded in a *knowledge deficit approach.* This means that risk communicators think that many people don't have enough information about science and risks or that they don't understand this information. This is also referred to as the problem of science illiteracy. Risk communicators assume that this is the main reason why most people are reluctant to accept, for example, agricultural biotechnology. To them, this knowledge deficit is what characterizes the gap between experts and the lay public.

Although being a lay person does not automatically imply that you are not able to answer simple questions about science or biotechnology in particular, much empirical scientific research concludes that many people are in fact not able to do so. Important examples of such research are the EuroBarometer surveys (e.g. Gaskell et al. 2003), which always receive a fair amount of media and policy attention. Since the 1990s, these surveys have also been carried out to study how Europeans think about biotechnology. One of the striking and often-mentioned findings of the 1996 survey is that 25 to 35 per cent (and these numbers only increased in the 2005 survey) of the Europeans answer 'true' to statements such as the following:

– Ordinary tomatoes don't have genes, but genetically modified ones do.
– By eating a modified fruit, a person's genes could also become modified.
– Genetically modified animals are always bigger than ordinary ones.

None of these statements are correct. This seems to indicate a lack of information on biotechnology or a lack of accurately understanding this information among the public. As a result, these survey results are often taken as an important quantitative source for biotechnological risk-perception research. The aim of such research is to study why the public usually has such a different perception of biotechnological risk than experts do, and particularly, why they are so negative about biotechnology. A crucial point is that this research is often implicitly carried out in order to reduce this negativism to a minimum, to avoid controversy and to increase the level of acceptance of biotechnology.

Controversies are often characterized by uncertainties: cognitive uncertainties (due to a lack of information of lack of knowledge), socio-economic uncertainties, and moral uncertainties (due to a lack of commonly shared normative evaluatory guidelines) (cf. Hansen 2005, 10). Following survey results like those from the EuroBarometer, researchers studying risk per-

ception (scientists or science-oriented scholars) argue that cognitive uncertainties must be the main reason behind people's negative attitude.

The EuroBarometer survey questioned Europeans about biotechnological controversies. It found out that most Europeans, in contrast to what the media state, are not very negative or technophobic about biotechnology. But they aren't very optimistic either. More specific findings show that most people are rather supportive of medical applications of biotechnology, while at the same time being much less supportive regarding agricultural use of biotechnology. This seems to correlate with people's uncertainty, measured in the same surveys, concerning the level of risk and benefits people think are linked to the application.

Because people are uncertain about the level of risk in the case of agricultural biotechnology, and because there is a controversy about GMOs (genetically modified organisms), the link is quickly made: it could be said that the public's uncertainty, according to some scientists only caused by blatant ignorance or stupidity, is the primary cause for this controversy. Science communicators see this risk perception research analysis as an important basis for their vision on science communication: science communication must aim at informing people about science and help them to understand this information better. The implicit assumption here is that knowledgeable, better informed people are more inclined to evaluate science positively. A positive evaluation of science means less opposition, a broader consensus, and thus less controversy. This is desirable in order to boost the public acceptance of science and to make further scientific development and progress easier.

However, while the results of EuroBarometer surveys show that there seems to be some relation between being negative or uncertain about biotechnology and knowing little about it, the EuroBarometer researchers do not conclude that a lack of knowledge tells the whole story. People can also object and feel uncertain about the introduction or development of a technology for other reasons, like moral or socio-economic ones. Factors such as trust, moral values, and religious beliefs play a very important role here. Thus, it is not only *cognitive* uncertainty that causes people's negative attitude. Informing people about the technical facts, so that they will not consider false statements to be true anymore, does, therefore, not automatically imply that they are more willing to accept the technology. Why then do risk perception researchers and science communicators still hold on to the belief that cognitive uncertainties are the ultimate cause of people's negative attitude and the source of the biotechnology controversy?

Science and Myths

Since the 1990s, many philosophers, sociologists, and others (e.g. Slovic 2000; Irwin & Wynne 1996) have looked closer into the issue of science communication, risk perception and public controversy. They also studied the knowledge deficit approach. Their conclusion has been that the public is not irrational, ignorant, or stupid. What is described by scientists as a lack of knowledge or information is in fact most of the time something completely different and, therefore, cannot be the main reason for a controversy or for the public to be negative about biotechnology. Marris et al. (2001) studied these findings and used the results of these studies to strengthen their own conclusion that scientists actually believe in 'myths'.

Marris and her co-authors have analysed literature and interviewed lay people about their ideas of biotechnology, as well as interviewing 'stakeholders':[2] 'those within governmental, regulatory, scientific (research and expertise) institutions, and commercial organizations (mostly biotechnology firms, less so food producers and food distributors)' (ibid. 2001, 75), and conclude that there are at least ten myths that these 'scientists' often believe in. For example:

> Myth 1: The primordial cause of the problem is that lay people are ignorant about scientific facts.
> Myth 2: People are either 'for' or 'against' GMOs.
> Myth 3: Consumers accept medical GMOs but refuse GMOs used in food and agriculture.
> Myth 5: Consumers want labelling in order to exercise their freedom of choice.
> Myth 6: The public thinks – wrongly – that GMOs are unnatural.
> Myth 7: The public demands 'zero risk' – and this is not reasonable.

Why are they called 'myths'? Humans have always created myths, in order to control, to give coherence and a sense of meaning to our experiences. Myths can inspire and guide us in our daily lives by helping us to deal with problems, fears or challenges. Like many other stories, myths make it possible for us to keep on living in a world that most of the times, seems uncontrollable and mysterious to us. But while myths can help us, they can also blind us by letting us believe in things that have no basis in reality. Marris et al. call scientist's perceptions 'myths' to stress the fact that these statements are not supported by empirical evidence, and

in order to 'convey the fact that among certain circles of actors they are assumed to be obvious and *do not need to be* supported by empirical evidence. Thus they circulate, largely unchallenged, accompanied by a series of repeated anecdotes, which are accepted as confirmation of these views' (ibid. 2001, 75; italics added). One of these 'anecdotes' is that, historically speaking, the public has never been enthusiastic about new technologies (for example cars, planes, or vaccines) being introduced into their daily life, but once they found out the benefits of these technologies they were keen to accept them. In scientific circles, the main idea behind this 'anecdote' is that things will happen in the same way in the case of GMOs: lay people have groundless and even irrational opinions, but over time these will evaporate. Even so, what this 'anecdote' and other 'anecdotes' fail to recognize is that the technologies in question were modified, through regulatory and technological evolutions, before becoming accepted (e.g. extensive regulations concerning the driving and manufacture of motor vehicles). Moreover, they fail to acknowledge that many of the original risk concerns raised by the lay public have indeed been realized (e.g. pedestrian deaths from car driving, plane accidents, the Chernobyl accident, negative health impacts linked to vaccinations, and so on), and that some more or less unanticipated negative impacts have also occurred (e.g. harmful environmental impacts of motor vehicles) (ibid. 2001, 77).

The acceptance of new technologies thus may have followed the increasing familiarity with these technologies, but not without the modifications made that took into account some very real concerns people had. In the end, then, what these 'anecdotes' accomplish is a widening of a gap between what scientists consider to be real objective risks and rational opinions and what the public thinks.

This difference between what scientists claim as objective risks and what lay people perceive as risks (and what is later often acknowledged as real risk), and why this difference exists, has been extensively studied. One approach, of which Brian Wynne is a prominent proponent, concerns the quality of knowledge on which risk management and politics is built on, with an important theme being the apparent 'scientification of knowledge'. On the one hand, according to Wynne, policy makers and risk researchers put too much faith in scientific knowledge, even to the extent that it denies or excludes uncertainties inherent in all knowledge production and excludes other forms of knowledge. On the other hand, they are predisposed to misunderstand the concerns of the public which underlie a number of technological controversies. Wynne (1996) illus-

trates this by the case of the Cumbrian sheep farmers in the wake of the Chernobyl disaster. These farmers experienced radioactive fallout from this accident, which contaminated their flocks and upland pastures. The government restricted them from selling their sheep freely, although this was their primary form of income. Furthermore, scientists visited the farmers to inform them about the influence of radioactivity and to test whether it decreased to an acceptable level. These tests were a reason to extend the period in which sheep could not be sold. The relation between the scientists and the farmers did not develop very well, because the scientists had no ear for what the farmers said about, for instance, where their flocks grazed, so that the scientists could study that part of the land instead of a part that was never grazed upon. Thus, 'the farmers experienced the scientists as denying, and thus threatening, their social identity by ignoring the farmers' specialist knowledge and farming practices, including their adaptive decision making idiom' (ibid. 1996, 39). According to Wynne's analysis, the scientists failed to be credible in the eyes of the sheep farmers. From numerous interviews with the farmers concerned, he derives that there are several criteria that lay people have to judge to assess whether an authority is credible (cf. 1996, 38). For example: does the scientific knowledge work, are predictions accurate? Do scientists pay attention to other available knowledge; for example, when doing tests do they follow farmer's knowledge on sheep grazing instead of testing on a pasture where they never graze? Are scientists open to criticism? What are the institutional and social affiliations of scientists; are they trustworthy or is there a conspiracy with the government? In analysing the controversy between the sheep-farmers and the scientists, it becomes clear that it is not primarily a lack of technical information or a lack of knowledge that underpins the farmers' negativity about the scientists and scientific knowledge. This could pinpoint an alternative vision on what the most important source of biotechnological controversies is. Wynne's analysis suggests among other things that it is 'trust' and 'credibility' that are the key dimensions of the public's understanding and perception of risks. Perhaps the public's experience of not being taken seriously and their lack of trust and credibility in scientists and scientific institutions are better predictors for scientific controversy than a knowledge deficit.

Professional Responsibility

Although the knowledge deficit approach is still 'endemic' (cf. Hansen et al. 2003, 111) in some scientific circles, trust and credibility are nowadays also acknowledged by risk perception researchers as important factors in technological controversy. Even so, it remains unclear what they understand by 'trust', 'apart from the absence of controversy' (Hansen 2005, 72). In Marris et al. (2001, 87 ff.) the interviewed scientists were asked why they think the public does not trust them. Their answers suggested that it is actually the public itself that was to be distrusted, and there are several reasons for this, for example:

– the public's lack of *adequate* information;
– the public's failure to acknowledge their past errors in risk perception and to learn from past mistakes;
– the public's lack of sanctions for those responsible for mismanagement or fraud;
– the public's denial of inherent uncertainties, especially long-term or chronic impacts;
– the public's reliance on limited types of expertise.

In reading these reasons it becomes clear that 'scientists' mainly have no trust in the public or its abilities. In the few cases in which they think themselves involved they claim that better communication (to increase public understanding) could prevent a lack of trust (for a typical example of this type of reasoning see Marchant 2001). It may not come as a surprise, therefore, that Marris et al. firmly conclude that the knowledge-deficit approach still exists.

However, not all scientists blame the public, at least not directly. Some scientists acknowledge that it is not only information that is misunderstood or distrusted, but also institutions or people (e.g. the third bullet above). Sometimes they look in the mirror: among scientists it is pretty often thought that 'scientific excellence' is the manner in which a 'crisis of trust' and credibility can be dissolved. An excellent scientist is a credible scientist. Although not admissible as empirical evidence, this became really clear to me in a recent discussion with a friend who holds a Ph.D. in theoretical physics: he could not believe that the public could distrust an excellent scientist – what more can such a person do to be trustworthy than being very good at his job? Psychological and social scientific research studies suggest alternatives. In their 2003 article, Hansen et al. review some of these studies. One of the conclusions they

derive from these studies is that the public makes a distinction between expertise or excellence, and trustworthiness. Although excellence might be something that can be objectively established, this is not the case with trustworthiness. People can perceive a scientist to be an excellent researcher, but at the same time not consider her to be a trustworthy person.

Annoying as that may be for hard working scientists, expertise is in the eyes of the public worth nothing without trustworthiness. And without trustworthiness there is no trust in science. Universities are acknowledging this by making it clear that researchers (scientists and scholars alike) and teachers at universities have a professional responsibility to do their work in such ways that it can be qualified as trustworthy. In its *Code of Conduct for Scientific Practice* (2004) the Association of Universities in the Netherlands (in Dutch: VSNU) provides a set of norms for teachers and researchers at universities that go beyond mere expertise; for example scrupulousness (being thorough and honest), reliability (being trustworthy), verifiability (that something can be checked and that results can be replicated), impartiality (not being led by personal or other interests), and independence (operating in academic liberty). These kinds of observations and codes can also be found in the business world. It is thus possible to draw a parallel between discussions on trust in science and trust in business organizations. In the business world the question of how to attain trust from the public is also a prominent topic. Public trust is necessary for the survival of companies. Without it, it would be impossible to develop and sell products. The public gives business its 'license to operate'. Businesses recognize that trust is not something one-dimensional; if it's not based solely on expertise, there must be other reasons that give the public reason to trust you. Koehn (1994, 11) confirms this: 'We do not base our decision to trust professionals upon cleverness or skilfulness. Since a given skill may be perfectly compatible with harmful service, our judgments of professionalism ultimately look beyond skill to some trust-engendering feature of professional practice.' Apparently then, there seem to be other forms of trust necessary than just professionals' expertise. However, the question remains as to what this 'trust-engendering feature' that Koehn refers to actually is.

In some literature (e.g. Nooteboom 2002; Hansen 2005) several forms of trust are distinguished, for example: trust in persons; trust in social roles or competences (doctors, judges, policemen); trust in procedures (that is not directly vested in actors; e.g. in the fairness and independence of courts); trust in materials (e.g. trust that machines will not fail).

What all these different forms of trust illustrate is that to overcome the public's distrust it is not enough for science communication researchers to provide information or to stress the credible source of their information, no matter how sound the scientific evidence or the scientist behind that source is. Scientists and scientific institutions are ever more almost 'pushed' in addressing the public's concerns and in showing that they take their professional responsibilities serious. Business organizations have already learned this lesson the hard way, something illustrated by the case of the dumping of the Brent Spar, a 'classic example of risk communication gone wrong' (cf Löfstedt & Renn 1997).

In May 1995, Shell and Exxon, two major oil companies, wanted to dispose of the oil storage buoy named Brent Spar. This decision received massive media attention. After this, everything went downhill for Shell. Although Shell communicated to the public that, environmentally speaking, dumping of the oil storage in deep water wasn't that bad, the public, especially in Germany, supported Greenpeace by boycotting Shell. Shell Germany received over 11,000 letters from lay people protesting against the dumping. Many of them complained that Shell was greedy: they had the money to dispose of the oil storage in a more responsible way, so why didn't they use it? Were they even thinking of the harm they could inflict on future generations (many people added photographs of their children)? Others stressed that, according to them, deep sea dumping was morally wrong, because it could hurt nature. Besides the boycott, Shell gas stations were threatened with bomb explosions. Shell was standing in the dark and had no idea how to counter the public's responses (cf Löfstedt and Renn 1997).

In the Dutch television documentary about the Brent Spar case, 'Een geschenk uit de hemel' ('A gift from heaven'; VPRO 2000), Shell officials acknowledged in retrospective that, at the time, they had a very weak risk communication strategy. What went wrong was that they:

> adopted a top-down approach rather than a dialogue approach...In so doing, they alienated the public immediately, and came across as arrogant and unmovable. Once the amplification process was at full speed, time was running out to launch such a dialogue approach. Second, Shell was not seen as trustworthy, while Greenpeace was (Löfstedt & Renn 1997, 134).

Shell learned from these events. In 1998, they published the report 'Profits & Principles – does there have to be a choice?' which marked their

'renewed' commitment to recognize the concerns of the public, and the need to listen, engage and respond, to the public. In the introduction to the 1999 brochure 'Listening and Responding', chairman Moody-Stuart states:

> We know that we will be judged by our actions, rather than by fine words...Of course, we don't expect you to see things just from our point of view. We know all real dialogue must be a two-way conversation, and so we've ended each advertisement with a request to our stakeholders to talk to us and let us know what they think (Shell 1999, 1-2).

What business organizations like Shell have learned from the public is that they really need a license to operate. The traditional business adagio has moved from 'trust us' via 'tell me' (information) to 'show me' (transparency) and 'involve me' (dialogue). Trustworthiness can be improved by being more socially responsive, by engaging in a real dialogue with the public, and by actively showing that you do something with the public's knowledge and concerns. This means that in order to enhance public trust in science, time (and money) need to be invested to study what really concerns people and what can be done to take these concerns seriously.

Taking Matters Seriously

'Was will das Weib?' is said to be one of the questions that haunted Sigmund Freud until the day he died. Maybe biotech scientists should experience that same haunted feeling considering the question 'Was will das Publikum?'. Of course, they could still choose *not* to think about possible answers to this question. Nelkin (1989) suggests that in the past, 'concerns about the effect of risk communication have spawned proposals to restrict public access of information' (1989, 110). 'From the perspective of industry, public discussion of potential risks could lead to the intrusion of burdensome regulations, fuel compensation claims, or require the installation of costly equipment to reduce risks' (ibid.). However, not informing people about what's happening in biotechnology is not a very realistic option. Clearly, there are costs and inconveniences for scientists and industries linked to the disclosure of information. But these costs and inconveniences must be weighed against what Nelkin calls the 'imperatives of open communication' (1989, 111 ff.):

– to engage knowledgeably as informed citizens in political choices, citizens must have access to information about the risks as well as the benefits of technology;
– informed consent must take precedence over efficiency;
– open communication may force public officials to be accountable to their constituents;
– open communication may help bring critical problems to the policy agenda.

So, as specified by Nelkin, 'there are sound political, ethical and pragmatic reasons for improving (…) access to risk information' (cf. Nelkin 1989, 111). However, what does Nelkins' plea for the imperative of open communication means concretely? According to many social studies (Hansen 2005; Irwin & Wynne 1996), the main thing the public wants is to be included in a dialogue with science and policy makers. In the case of the Cumbrian sheep-farmers, the scientists could have taken the farmers' practical knowledge seriously when they were applying their scientific knowledge to these people's flocks and pastures. In the case of the Brent Spar it means that Shell should have considered the public's ethical concerns before deciding on dumping the oil storage buoy.

Business organizations already learned from experience that the public wants to be included in a dialogue; slowly but surely words like ethics, integrity, values and responsibility became incorporated in management jargon. In the academic world, scholars acknowledge that the established sources of knowledge cannot always deliver solutions to problems that are satisfactory to all stakeholders involved (including the public). People's concerns have to be considered too. The question remains how this can be done sincerely, without letting it look like mere window-dressing (saying that you pay attention to the public's concerns or needs but actually doing nothing).

According to Karssing (2000, 19ff), some organizations might think that they don't have to take the people's concerns very seriously. However, he claims that there are very good reasons why organizations should do so; in the end it will only cost them if they think they can solve problems with 'window dressing'. Karssing distinguishes four motives for organizations to pay attention to people's concerns:
– because it limits their risks;
– because it is profitable;
– because it is the right thing to do;
– because they are forced to by law.

According to Karssing, these four motives do not exclude each other. Of course, organizations can have more than one reason to do something, just like individuals can have more than one motive to do something. Although it is never really clear what one's motives are, because they are invisible to other people, Karssing states that it would be very cynical to conclude that window-dressing is then always a possibility. Besides that, when it comes to business ethics: 'you can fool all of the people some of the time, you can fool some of the people all of the time, but you cannot fool all of the people all the time' (Abraham Lincoln, quoted by Karssing 2000, 22). Organizations or people (be it business organizations, scientists or scientific institutions) that fool people will have even more problems to be trusted in the future.

Conclusion

Most scientists experience the public/expert gap as the dominant reason for the biotechnology controversy on GMOs. According to many of them, what causes this gap is the lay public's lack of being technologically informed or the lack of having the knowledge to understand such information. In this paper I question whether this really is the primary source of the controversy. My conclusion is that it is not. I agree with Marris, et al., that there are certain 'myths' at the basis of this knowledge deficit approach. Risk science communicators should take more time to study what really lies beneath the controversy. This paper has argued that concepts like trust and credibility play a major role at the core of this controversy. It has argued that a more self-reflexive attitude on the scientists' side (having an eye for their own mistakes, weaknesses and responsibilities), and a more open attitude for the concerns of the public involved, could really help. Involving the public in a real dialogue might prove a better way to quench the heat of the biotechnology controversy. That this is an important subject for further study, becomes obvious when following the media attention for biotechnology. Not only is biotechnology still a very hot topic, controversies over biotechnology are only one example of the ever-recurring question of how we should think and act in situations when science and new technologies are involved.

Notes

2   Because 'stakeholder' is also a term that is often used in everyday life to in-
    clude the public as well, I will from now on say 'scientist' (between quotation
    marks) in cases when I also mean those within governmental, regulatory, and
    scientific institutions, and commercial biotechnology organizations.

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14 Public Trust and Nutrigenomics

Franck L.B. Meijboom

Introduction

> A trip to the diet doc, circa 2013. You prick your finger, draw a little
> blood and send it, along with a $100 fee, to a consumer genomics lab
> in California. There, it's passed through a mass spectrometer, where its
> proteins are analyzed. It is cross-referenced with your DNA profile. A
> few days later, you get an e-mail message with your recommended diet
> for the next four weeks. It doesn't look too bad: lots of salmon, spinach,
> selenium supplements, bread with olive oil. Unsure of just how lucky
> you ought to feel, you call up a few friends to see what their diets look
> like...(...) Nobody is eating exactly what you are. Your diet is uniquely
> tailored. (Grierson 2003)

This example is probably quite different from what we are used to as we
do our daily shopping. What we put in our shopping trolley is often only
to a marginal extent determined by our health status, let alone by our
genotype. However, as the result of research in the field of nutrigenomics
this scenario might become less like science fiction than it may appear
now. Nutrigenomics is a generic term for a field of research that pro-
vides the opportunities to study the interactions between food, lifestyle,
and genetic factors. This results in many new food and dietary products.
Personalized dietary advices can be one of these products. The aim is to
introduce dietary advices that fit the specific genetically induced risk pro-
file of a person or of a sub-group within a population, while traditionally
the aim is to develop advices that are beneficial for individuals in general
(cf. Meijboom et al. 2003).

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This is a useful example to use for an analysis of trust in new technologies, since it illustrates that nutrigenomics research does not only result in new opportunities of health promotion and preventive medicine, but also raises questions of trust. A personalized dietary advice that can reduce our individual risk of a certain ailment, for instance colon cancer, does not merely presuppose self-discipline, but also trust in numerous other agents. Our need to trust experts and (regulatory) institutions grows with the introduction of new technologies. On top of this issue of the increased need of trust, the combination of two sectors, the food and the health sectors, has as a result that existing routines that provide predictability are either unavailable or insufficiently clear, which complicates trust (Meijboom 2007).

This leads to the question of how we have to deal with public trust in nutrigenomics products. This question is especially relevant since public trust in food products has been subjected to a lot of discussion and academic attention during the last decade (cf. FAO 2003; Poppe & Kjaernes 2003). Especially the introduction of technologies such as biotechnology have raised various questions of trust.

The dominant (regulatory) approach to this problem aims at establishing trust by providing information on risks and increasing the predictability of the product. This is in line with some theories that claim that establishing trust is mainly an issue of risk calculation based on information. However, with all the efforts that have been made at the level of risk analysis and communication, we are still faced with a debate on the lack of public trust. This calls for an explanation and raises the question of how we have to deal with public trust when we are confronted with novel food products.

In this chapter I argue that the problems of trust can better be addressed as problems of trustworthiness. From this shift of focus, I analyse the tension between the improved risk analysis and information services and the problematic status of trust. First, I argue that trust is based on other considerations than risk calculation. Trusting and making risk calculations are two different, albeit sometimes complementary, mechanisms that help us deal with situations of uncertainty. Therefore, better risk assessment and more risk information do not necessarily lead to more trust. Second, information that enhances predictability is often proposed as a way to establishing public trust. However, enhancing predictability with respect to new food products is not an easy task. Moreover, showing that an institution is predictable does not necessarily entail that it is trustworthy. I also argue that a focus on trustworthiness illustrates the importance of taking the emotional aspect of trust seriously and claim that this calls

for the introduction of two normative conditions for trustworthiness. The emotional aspect of trust explains why the same information and the same acts of the trustee are evaluated differently, depending on whether one trusts the other actor or not. The normative conditions illustrate why the vulnerable status of the individual should not be seen as an opportunity to take advantage of them, and that it is possible to formulate trustful expectations when we lack predictable actions.

Trustworthiness as the Key

Trust enables an individual to perform actions, such as buying and consuming food, despite the uncertainty and the lack of personal control he is confronted with. For instance, when I lack any kind of knowledge regarding the possible health effects of a nutrigenomics product, I am still able to buy and consume it. I would not buy it because I am indifferent to my own health, but because I trust certain agents in science, the food sector, or the government to take care of my health. In trusting, one acts 'as if' certain possible situations will not occur (Lewis & Weigert 1985). This acting 'as if' is not an escape into a make-believe world of certainty and control. When we adopt an attitude of trust we do not pretend, but we actually have a sincere belief that the other agent is trustworthy, that is, competent and adequately motivated to act in the expected way.

Since it is the attitude of the individual who is trusting that is decisive here, problems of trust are often addressed as a dilemma of the individual agent. Consequently, the problem is framed in terms of a failure of trust from the individual. Therefore, increasing trust is considered the most effective method to address the problem.

However, the definition of a decline in trust as a failure of individual agents has an incorrect starting point. To address problems of trust in a fruitful way, the question should not be 'How to increase trust?', but 'Why would an individual agent trust the other agent?' and 'Is this agent trustworthy?' To start with, he who wants to be trusted should be trustworthy. This shift has a practical reason, since institutional agents cannot change individuals so that they will adopt a trustful attitude. However, they can show themselves to be trustworthy. The shift in focus is important since defining a hesitance to trust in terms of the individual's problem only underscores and confirms the individual's vulnerable position.

The observed problems of trust can be interpreted as an important signal of the problems with respect to the trustworthiness of agents.

Therefore, the problems should better be addressed as problems of trust-worthiness (Meijboom et al. 2006; 2008) as opposed to problem of trust. Consequently, the aim is not just to build trust in novel food and dietary products, but to show oneself to be a trustworthy actor.

Public Trust as Different from Considerations of Risk

Most definitions of trust have one element in common: the idea that it enables agents to cope with situations of uncertainty and lack of control. The context of trust is always one of uncertainty and related to the inability to personally control the situation. This element can easily be recognized with respect to products of nutrigenomics. As a consumer you cannot but rely on experts in food safety, health claims, and dietary advices. We simply lack the knowledge and capacity to personally assess these issues. Trust, however, enables us to act in spite of this uncertainty and to make choices, even when we cannot fully control the situation.

As a result of this link between uncertainty and trust it is easy to argue that trust is a risky matter (Gambetta 1988) and that it is a venture (Luhmann 2000 [1968]). This close link between trust and risk leads some authors to the conclusion that trust is a bet about future actions of others and consequently 'copes with one type of risk by trading it for another type of risk' (Sztompka 1999, 32). In relying on others, we run a risk that we can never be sure whether the other party will act in the expected way. Consequently, the aspect of risk is considered as a central element in the understanding of public trust. In its most stringent form, trust is considered as just a subclass of those situations involving risk (Coleman 1990).

From this perspective, risk calculation is essential in the process of maintaining and building trust. When we consider trust in these terms, it is mainly a technical matter of calculation. It requires the assessment of the risks and benefits of trusting in the light of the aims and goals one pursues. This view of trust as a matter of risk calculation can easily be recognized in European policy measures that aim to build trust in new technologies that have an impact on the food sector, like biotechnology. The emphasis on risk assessment is particularly in line with the idea of trust as based upon risk calculation. It has been suggested that the results from improved risk analysis directly contribute to the individual's willingness to trust persons and institutions. Moreover, the risk analysis is assumed to be especially relevant for new technologies in food, such as nutrigenom-

ics, that are surrounded by ongoing scientific and public discussions on the benefits, unknown societal consequences and long-term effects of the product.

Notwithstanding the relevance of an adequate food safety policy including attention to proper risk assessment, trust and risk are concepts on different levels. In empirical research evidence has been found that decisions to trust are not always thought of as risky gambles (Eckel & Wilson 2004). From another disciplinary background, Lagerspetz (1998) has drawn similar conclusions. In his philosophical analysis he underscores that trust is something fundamentally different from risk taking. He does not deny that trusting is important in cases of uncertainty and that entrusting certain objects to someone else may be related to risk. Yet he emphasizes that trusting is not the same as deliberately taking a risk. He states that 'considerations about risk taking can only motivate risk taking, not trusting' (56).

This confronts us with a dilemma. On the one hand, when a person trusts he is in a vulnerable position. Thus, trust appears to be a risky matter. On the other hand, Lagerspetz's view is also plausible. When a person trusts, it appears that he does not perceive the situation as risky or as a gamble, although he certainly will run a risk. This sounds like a contradiction, but it is not. The problem here is that the authors have a different focus, which illustrates the importance of a distinction between first-person and third-person perspectives. From a third-person perspective, trust is certainly a risky matter: A person who trusts takes a risk. In acting as if only one state of affairs were to be expected, one runs a risk and makes trust close to a gamble. Nevertheless, from a first-person perspective the picture is quite different. As a person who trusts one is not aware of taking this risk. If he were, he would be a risk taker and not a person who trusts. The person who trusts judges the trustee to be competent and properly motivated with regard to what is entrusted. He considers the trustee to be trustworthy. From the perspective of the individual who is trusting risks are not the main element of trust, only as an observer one may notice that this person runs a risk. An example to illustrate this point: in the case of faith, believers can sometimes take considerable risks – from a third-person perspective – without any sense of uncertainty. This is not the result of different views on risk management, but it is a result of the believers' consideration of God as ultimately trustworthy. The individual believer may not be able to assess the involved risks in relying on God, but that is not the point. Because he trusts he is certain about his acts. Only if he were to lack such trust, he will consider his way of acting as risky and uncertain.

This shift in focus has direct consequences for the idea of trust as the act of risk taking. In contrast to a risk taker, a trusting person is not calculating but coping with complexity. He is not calculating risks, but dealing with the uncertainty he is faced with. Trust is not something that you decide on with a personal computer. Hence I conclude that the act of taking risks and trusting are two complementary, yet different mechanisms to deal and cooperate with other agents in cases of uncertainty. A risk approach aims to clarify the uncertain aspects of the situation in which one has to rely on another agent. In this context a risk-benefit analysis provides tools to assess this probability and to evaluate the hazard, it helps to translate the problem of known uncertainty into one of risk. Consequently, I can make my personal assessment and decide whether it is worth to take the risk involved in relying on another agent or not. A risk-benefit analysis does not provide a direct reason to trust, but it can show that the risk, given our preferences, is worth it. Then I can choose to take 'the risk of cooperating with you on some matter even if I do not trust you' (Hardin 2002, 11).

A trust approach to uncertainty, on the other hand, has a different focus and starts where a risk focus ends. It focuses on those situations that remain uncertain even after all possible uncertain aspects have been turned into risk factors. The aim is not to try to make a risk-benefit analysis, but to personally assess the competence and motivation of the trusted agent. When I trust a company that offers novel foods I do not assess risks, but I make an assessment of the company's competence and motivation with respect to this new food product. In this process of assessing the competence and motivation, risk information may contribute to trust only as far as it serves as a signal or proof of the competence and motivation of the trustee. Suppose that the risk at stake is very low or the risk information is of a high quality, if I do not consider the other agent, on whom I have to rely, to be competent or to have any goodwill to me, I will not trust him. Maybe I consider it worth the risk and act nonetheless, in that case I am a risk taker, not a person who is trusting.

This explains why risk information or improved risk analysis does not directly influence the level of trust. It only has direct influence on a mechanism that helps us cope with uncertainty that is different from trust. In building trust, risk information only plays a secondary role, as far as it provides clarity about the trustworthiness of the other agent.

Communication to Enhance Predictability

I have concluded in the previous section that risk information is only of secondary relevance to trust. However, we should not jump to the conclusion that information in general about the trustee is irrelevant. On the contrary, information facilitates trust. To assess the competence and motivation of a company that offers novel food products an agent needs information. However, as improved risk analysis does not directly build or maintain trust, more information also turns out not to have a direct influence on trust. O'Neill shows that the availability of information is often not the real problem. She argues that although 'It seems no information about institutions and professions is too boring or too routine to remain unpublished' (2002, 66), we are still confronted with problems of trust. We do not need 'just' information, but the offered information has to be qualified; it should provide the truster with material that enables her to clarify what she can expect of the other party.

This additional criterion has been recognized in public policy on food. Consequently, a lot of attention has been paid to explicate routines and patterns in the food sector. Transparency has become a key concept. The argument that underlies this focus is that the real problem of trust is a lack of predictability and a need for structures that enable a truster to anticipate. At first hand, this seems a promising approach. Trust needs a certain level of predictability. This is what is meant by 'anticipatory trust' or 'predictive trust' (Sztompka 1999, 27-29; Hollis 1998, 10-11). In this type of trust one has the expectation that the other party will act according to normal patterns and routines. If patterns and routines are available, it is easier to predict how the trustee will react. Making a situation more predictable by providing information or by increasing transparency is a necessary, but not a sufficient condition in the aim to build public trust in new food technologies. I have two arguments that lead me to make this claim.

First, in the case of new food technologies or products that result from these innovations, trust based upon predictable patterns is complicated by (a) the lack of predictable patterns and (b) the capacity by which the available patterns are applicable. To start with (a): it is by definition that food technologies confront us with situations in which it is not easy to predict what we can expect. Concerning novel technologies, we often lack the predictability and familiarity that can serve as a first basis for trust; this is partly because we are confronted with new benefits, unknown carry-over and long-term effects of novel technologies, and partly because

we lack a history in which trustees could have proven their reliability. There is no clear pattern or history that only has to be explicated or revealed in order to show the person who is trusting that his reliance is warranted. It takes time before trust based on routine is achievable. Until that moment, the problem of trust remains, because it is unclear what to expect of the other party. With respect to (b): issues of trust will arise as a result of conflicting patterns, but it is still difficult to predict how the trusted person will react and what to expect. Nutrigenomics combines different domains, such as food and health and the introduction of products, such as genotype-adjusted dietary advices, merges expectations and patterns of food production and consumption with those of preventive medicine and health promotion. We have clear patterns and traditions for both food and health care that provide a predictability that shows what we can expect regarding issues on for instance safety and justice. This helps the building of trust with regards to food and pharmaceutical products. However, dietary advices based upon nutrigenomics can be categorised in both groups. There is not one unambiguous pattern available upon which one can formulate trustful expectations. Trust is either based on patterns of the food sector, although the advice has a health-related claim, or it is based on patterns of the health domain, although it is a dietary product. Thus, the introduction of such dietary advices complicates pattern-based trust. In this situation more information or increased transparency contributes to the explication of patterns of behaviour and action, but it does not address the fundamental problem of which the conflicting patterns are the most applicable and serve as a warrant for one's reliance.

A second argument focuses on a conceptual problem of enhancing predictability to enhance trust. Trust is an attitude that enables agents to cope with situations of uncertainty by formulating a positive expectation towards another agent. Hence, clarity of what one may expect from another is essential. However, trust is more than mere expectations. It is a specific attitude that entails a positive expectation. Therefore, increasing predictability as such does not lead to trust. Suppose that I am regularly confronted with some criminals. After a while their doings become pretty predictable for me. Nevertheless, I would not say that I *trust* that they will burgle the university's new flat screens, although I *expect* that they will do so, based on my knowledge of their routines. Hence, 'If there were nothing other than expectations at issue, the current literature on trust would not exist' (Hardin 2006, 33). We do not merely rely on patterns. We rely on other agents since we have to consider them as being trustworthy or not.

Similarly to how I concluded the section concerning risks, I also conclude that the increase of predictability contributes to building trust only to the extent that it serves as a signal or is proof of the competence and motivation of the trustee.

Information As an Answer Rather Than a Matter of Knowledge

When we define problems of trust as problems of trustworthiness it is clear that merely increasing predictability is not a sufficient condition to build trust. Nevertheless, information is essential since we need evidence about the competence and motivations of the agent on whom we have to rely. Without any evidence on the other agent we can hope or gamble that he will act in the favourable way, but we cannot trust him. To trust we need information. The relation between trust and information, however, is complex. Some information can be conceived by person A as sufficient reason to entrust something to an institution, while person B considers the same evidence as neither sufficient nor an adequate reason to trust. Moreover, it is even possible to trust when we objectively lack sufficient evidence. To understand this we have to focus on the epistemology that is used in the case of trust and on the role emotions play in perceiving and evaluating information. In this section I analyse the relation between trust and evidence. The section thereafter deals with the emotional dimension of trust.

Trust, Knowledge, and Evidence

When we trust we have a sincere belief about the trustworthiness of the trustee. This, however, does not imply that we have knowledge. With respect to knowledge we must understand how reasons prove that the proposition *is* true, yet in a case of trust the focus is on the reasons that prove why you *think* it is true. It can be sufficient for the person who is trusting to *think* that the reason he has proves the belief to be true. For instance, as a consumer I trust science and industry to develop products based upon nutrigenomics that are beneficial to my health. This attitude is based upon what I know about the competence and motivation of agents in science and industry from my own experience and external sources, such as newspapers, the Internet, or hearsay. For my attitude it is important that I personally believe this to be true rather than that it *is* true, in the sense that my belief is justified by public criteria.

This illustrates that the epistemology that is needed in the case of trust does not and need not meet the standards of traditional epistemology that aims to find justified true beliefs. A person who is trusting does not primarily search for evidence that is justifiable on public criteria, but is after an answer to the question whether the other person on whom he has to rely is sufficiently competent and motivated to be trusted. To answer this question, he needs evidence. However, a truster wants to 'use' the evidence, 'not to verify or justify it' (Hardin 2003, 17). When the knowledge that leads to trust can be justified by universal criteria it may be an extra motivation for trust, but it is not a necessity. This pragmatic focus in the search for evidence demands a specific epistemology. In Hardin's terms, it asks for a subjective and pragmatic 'street-level epistemology' rather than an epistemology that focuses on justification, that seeks for knowledge and deals with truth claims (1993; 2003). A person who is trusting certainly will check the value of the information he has obtained, but this check does not need to meet external or public criteria of justification. Hardin stresses that the epistemic search is focused on usefulness rather than justification. If information provides an answer to the question whether the other agent is trustworthy it is relevant, even if it cannot be justified as true knowledge by any of the criteria of a standard epistemology. Obtaining knowledge with respect to trust is 'not simply a matter of analyzing the given information to get to some factual expectation on what will happen or has happened. It rather amounts to evaluating information in a certain way and asking certain questions' (Lahno 2001, 178).

Hearing this argument, it is evident that there are differences between the amount of knowledge a person needs and the extent to which they accept knowledge as evidence for the trustworthiness of another agent. It depends on their assessment of knowledge as a useful answer to the question of trustworthiness. There is no objective amount or quality of evidence that is both necessary and sufficient for someone to come to trust. This explains why the same information does not necessarily result in the same level of trust for all people who are trusting.

The Leap Element of Trust

As a person who is trusting, we not only use a pragmatic epistemology, it is even possible to trust when we objectively lack evidence, or to remain distrustful even though all evidence shows the trustee to be trustworthy.

This point illustrates that evidence is a necessary, but never a sufficient, condition for trust. Lewis and Weigert write: 'No matter how much additional knowledge of an object we may gain (...), such knowledge alone can never cause us to trust. (...) The cognitive element in trust is characterized by a cognitive 'leap' beyond the expectations that reason and experience alone would warrant – they simply serve as the platform from which the leap is made' (1985, 970).

There is a gap between the interpretation of the accessible information on the trustworthiness of the other agent and my trust in this person or institution. Evidence is essential with respect to trust, but there is 'something else' between the recognition of information as relevant for the assessment of trustworthiness and the actual trust in a person or institution. There is more than the evidence at stake. There is an element in the process of coming to trust that 'happens to us' rather than that we decide to adopt a stance of trust. Simmel defined the gap between the interpretation of the facts and the expectations that are the result of trust as a process of suspension (1950). It is a suspension of one's hesitation and doubt with regard to another person or institution. He identified in this gap between interpretation and expectation a 'mysterious further element, a kind of faith that is required to explain trust and to grasp its unique nature' (Möllering 2001, 404).

The reference to religious faith seems appropriate since coming to have faith in God equally entails a leap moment. Like trust, faith is not the logical conclusion from all possible situations. On the other hand, faith is not completely independent of the available information (cf. Berkhof 1993). Historical evidence, scientific research or formal rules of logic certainly influence one's faith in God, but do not fully determine whether or not one comes to have faith. This leads Kierkegaard, for instance, to claim that the reflection on the facts available can be halted only by a leap of faith. Otherwise, the subject 'is made infinitive in reflection, i.e., he does not arrive at a decision'.(1992, 105) This does not imply that one is no longer aware of the uncertainty or one's vulnerability, but that the commitment entailed with authentic religious faith is deeper than one's interest to justify one's attitude based upon identifiable reasons only.

The reference to commitment can also be recognized in the work of Giddens, who describes the additional element of trust as 'a leap to commitment, a quality of 'faith', which is irreducible' (1991, 19). He argues that the 'leap of faith' is a process of bracketing the lack of knowledge and ignorance (18-19; 224). This emphasizes that the need for trust remains unchanged: one still is ignorant or confronted with uncertainty; one still

lacks control. However, the one who trusts brackets this problem and consequently trusts the other agent, since he has a commitment with respect to the trustee or the object of trust. Having a deep commitment, however, is not the only way to make a leap. Lewis and Weigert identify two other reasons. First, the particular psychological make-up of the individual can enable him to make the leap beyond evidence. If there is no balance of the basic trust over basic mistrust going beyond evidence becomes extremely difficult. Second, one is able to make a leap on the assumption that 'others in the social world join in the leap (...) Each trusts on the assumption that others trust' (1985, 970). This belief with respect to the participation of others illustrates that trust presumes trust, or in other words that we have to trust in trust (Gambetta 1988).

Explicating this leap element of trust illustrates that trusting is informed by, but not exclusively based on, evidence. Addressing problems of trust from the perspective of information easily ignores that the relationship between trust and evidence is more dynamic. Evidence is not only the input in the complex process of coming to trust. The direction is also the other way around: trust influences the way we perceive and evaluate information. The leap aspect of trust illustrates that at a certain point one can accept specific evidence and consider the provider as being trustful because of a certain commitment that does not have any further justification. This illustrates that trust has the ability to colour the value we attach to certain beliefs, make them resistant to change or exclude other beliefs from deliberation. This indicates that trust includes an emotional component.

Trust and Its Emotional Dimension

Trust cannot only go beyond the evidence, the evaluation of the available information also tends to confirm the pre-existing trust or distrust. The presence or absence of trust substantially influences the way we interpret information about the person who, or institution that, we have to rely on. This concerns the emotional dimension of trust. Adopting a stance of trust entails a positive belief on the subject or object of trust. These beliefs are informed by knowledge, however, we have seen that trust is not fully evidence-based. Emotions also play a role.

'A Lens of Trust'

Following Frijda (986; Frijda et al. 2000) emotions and beliefs are two mental states that are to be distinguished, yet mutually influence each other. Not only will our beliefs determine our emotions, this influence also works in the reverse direction: emotions can create and shape beliefs and can make them resistant to change. This influence of emotion on beliefs is possible because beliefs are more emotion-sensitive than knowledge (Frijda et al. 2000), but also because emotions 'permeate our experiences' (Solomon 1994, 296) and make us looking at the object 'through one's own window' (Nussbaum 2001, 28). Following this perspective, emotions are not merely unwanted disturbances of an otherwise completely rational calculation. As Nussbaum stresses, emotions are not just 'unthinking forces that have no connection with our thoughts, evaluations, or plan'. They are appraisals or value judgments that we ascribe to things and people that we regard as important for our own flourishing, yet are beyond our full control (2001, 26-27, 43, 90). This implies that our emotions modify action-readiness and define the way we perceive the world and our conception of the world (Frijda et al. 2000).

When we refer to emotions in these terms it is a small step to recognizing the emotional dimension of trust. In the literature on trust it has been regularly observed that 'trust is a way of seeing that guides our attention, colours our perceptions, and thus gives rise to certain beliefs' (Miller 2000). The presence of trust makes us interpret another's behaviour and the available information through a 'lens of trust' (Jones 1996, 13), which implies a way of evaluating information in a specific way (Lahno 2002). This view of trust explains why the available evidence can be sufficient reason for person A to entrust something to an institution, while person B does not consider the evidence as an adequate reason to trust. Information not only influences one's stance of trust, but the presence or absence of trust also colours the perception of the information and of beliefs as trustworthy. This influence can be so strong that we can hold an attitude of trust or distrust although we lack the evidence and even do not have the belief that it is justified. Suppose that the producer of a useful novel food product has been recommended by your local GP, who is a close friend. You believe that the producer is trustworthy. Nonetheless, you do not buy the product since you are unable to stop conceiving the company with suspicion because you look through a 'lens of distrust' at these kind of companies. Consequently, you see them as untrustworthy partners (cf. Jones 1996). If trust were to be a belief based

upon justified knowledge your attitude would be unjustified, but your suspicion is sincere, even though it is hardly possible to articulate the reason for it. Ascribing this emotional dimension to trust can explain why we can remain hesitant to trust even when others or our own beliefs say otherwise, and it clarifies why we can remain trustful even if the evidence tells us not to trust.

Trust and Manipulation

The recognition of the emotional element of trust can lead to the conclusion that people who trusts are easily manipulated, since it is all about the individual's perception rather than about genuine trustworthiness. Thus, one can argue that when an institution wants to be trusted it only has to pretend that it is competent and motivated by the cares and concerns of individuals. Whether they are sincerely trustworthy or only motivated by strategic reasons does not really matter as long as the individual perceives the institution as trustworthy. This view, however, is problematic for two reasons. First, it disregards the reflective element in emotions. Emotions, as defined above, are more than mere feelings and not completely independent of rational reflection. Thus the inclusion of an affective element in trust does not make trust completely disconnected from any form of reflection and deliberation. A person who is trusting is still able to reflect on his emotions and the emphasis on the affective aspects of trust does not exclude the impact of critical reflection by other agents. Therefore, the assessment of competence and motivation does matter in the process of trust.

This leads to the second problem. Since trust is based upon someone's assessment of the trustworthiness of an agent it requires that the trusted person should be sincere in what he communicates concerning his competence and motivation. Pretending to be trustworthy for strategic reasons is not morally neutral. When the trustee does not respond to what is entrusted this can have serious moral implications, since the individual may suffer losses, for example, one's freedom to choose food products is limited or one's health is endangered. This has implications for the incentives of trust-responsiveness since the person who trusts is often not able to prevent this situation her/himself.

Two Normative Conditions for Trustworthiness

From the observation that harm can be done to individuals when they are not in the position to trust others, it would be too easy to conclude that there is an obligation for the trustee to respond to trust, however, it indicates two moral conditions for trustworthiness.

Trustworthiness ought to be motivated by a specific view of the *moral status of the person who is trusting*: the dependent and vulnerable position of the individual who is confronted with the products of a new technology is not to be taken advantage of, but it is an imperative for the trustee to act in a trust-responsive way, since one is faced with an individual with inherent worth. Thus Kant's second formulation of the categorical imperative: 'Always treat the humanity in a person as an end, and never as a means merely' also underlies trust. As for morality in general, trusting has to start from the assumption that human beings matter. The basic assumption that other agents should be treated as an end in themselves should underlie trusting as well. Trust and trustworthiness have to start from the fundamental moral requirement to 'acknowledge each human being aright' (Cordner 2007, 67). This is not to say that the trustee may not profit from trusting, but it implies that trust may not be used in a way that disrespects the inherent worth of the individual who will give the trust.

This shows that we have reasons to trust and to respond to trust. With respect to the latter, the vulnerable status of the person who is trusting is crucial. This vulnerability provides reason for reacting, since not responding to the vulnerable status of the trusting person implies a violation of his or her inherent worth. This requirement provides a direct reason to act in a trust-responsive manner and prevents an agent to only pretend trustworthiness.

Additionally, trustworthiness includes a second moral precondition with respect to motivation: the recognition of the trusting person as a *moral agent*. The issues concerning the case of nutrigenomics products are not merely technical or scientific themes, they also include moral issues. Products at the interface between food and health highlight questions concerning moral responsibility and the interpretation of well-known principles, such as justice and autonomy. In both the food and the health sectors it is relatively clear what we may expect of each other. However, at the interface of both sectors this is often less obvious. For instance, can we expect a company to live up to all the expectations we normally have regarding the medical sphere when they introduce a genetic test kit to provide genotype-adjusted dietary advice? To answer this question the use of ethical deliberation is inevitable.

An Additional Safeguard on an Institutional Level

The two conditions of trustworthiness raise a serious question: 'What incentive would an agent on an institutional level have to live up to the demand to take the moral value of the person trusting as primary and to reckon her as a moral agent?' This question also holds on an individual level. However, Niebuhr's idea of 'moral man and immoral society' (1934) shows why the issue is even more prominent on an institutional level. Moral problems that do not occur or are implicit on a personal level become problematic on a societal level.

This illustrates that the requirement to take the inherent worth of human beings as primary in trusting relationships needs an extra safeguard with respect to institutional trust. To take the inherent value of the person who is trusting as primary we do not only require rational agents who pursue their own interests and act strategically, but also *reasonable* agents. One is reasonable when one is 'ready to propose principles and standards as fair terms of cooperation and to abide by them willingly, given the assurance that others will likewise do so' (Rawls 1993, 49). As long as trust is just a strategy to promote one's self-interest, institutional *trust* will be highly problematic as it would not start from the recognition of the inherent value of the other, but from the aim to achieve one's goal. Therefore, the emphasis on reasonableness and the attached willingness to act on terms that others, as equals, might reasonably expect to approve is crucial for trust.

For this reason, we need to introduce a contractual element. This does not imply the replacement of trust by contracts, but entails the introduction of *moral* contractualism in order to safeguard the inherent worth of humans as being primary in a trusting relationship, even in an institutional context. Contractualist theories can provide this extra safeguard by insisting that rules of behaviour must be justifiable to each other. The moral value of each person entails that one must judge the actions and behaviour of trusted agents using the criterion of whether one can reasonably agree on the underlying principle, or more specifically, whether the trustee acts on principles they could not reasonably reject (Scanlon 1998). This implies that in trusting one does not only have a formal, but also a substantial reason to judge and even to veto the acts of the trustee. This can serve as an assurance that the individual is acknowledged as a moral subject that should be respected in his vulnerability even in an institutional context and can help to identify what one may reasonably expect of an institutional agent.

Public Trust in Products from Nutrigenomics Research

We can now formulate four concluding remarks on public trust in nutrigenomics products. First, there are good reasons to carry out strict safety studies before introducing novel products, such as personalized dietary advices, in order to assess the amounts of risk involved. However, to address problems of trust these studies and the underlying regulations are not sufficient, since trust and risk are on different levels and risk information is only relevant as far as it provides information on the trustworthiness of the agent on whom one has to rely. Trust requires an indication of the competence and motivation of the trustee, rather than a reduction of risk.

Second, the increase of predictability enables us to rely on others more easily, since we can better anticipate on their future actions. However, especially in the case of nutrigenomics, the explication of routines and patterns on which an individual can anticipate is highly difficult. Since nutrigenomics contributes to the interaction of the health and food sectors it is less clear what levels of competence and motivation can be expected of the agents to be trusted. Thus it is more difficult to asses the trustworthiness on the basis of routines and predictable patterns only.

Third, the explication of patterns and the increase of transparency in the sector show that the relation between providing information and establishing trust is complex. Information is highly relevant to address issues of trust since they provide the person who is trusting with knowledge about the competence and motivation of the trustee. However, when an institution aims to provide information in order to prove to be trustworthy it has to reckon with the fact that people who tend to trust use a subjective and pragmatic kind of epistemology, and that trust entails an emotional dimension that profoundly affects the perception and interpretation of the available information.

Finally, to act trustworthily implies that the trustee recognizes the person trusting as a moral subject with inherent worth and as a moral agent. The first condition prevents that the vulnerable status of the individual who is confronted with the products of nutrigenomics is seen as an opportunity to take advantage of. The second condition enables the trusting person to formulate trustful expectations when he lacks predictable actions. Only if it is clear what we can expect with respect to the competence and motivation of, for instance, a company that offers a genetic test to recommend a dietary product that reduces a consumer's risk of an ailment, is it possible to trust such a company. This is not a discussion about risks

or predictability, but about moral responsibilities and the interpretation of moral values and norms that show us what we can reasonably expect of each other. The recognition of these moral questions is a necessary condition for being trustworthy and consequently for building public trust in new technologies.

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15 Deep Pluralism: Interfaith Alliances for Progressive Politics

Nancie Erhard

On the morning of 11 September 2001, I was in Manhattan. By noon, I was attending an improvised worship service, which included a Jew, a Christian, and a Muslim, each reading from his or her own scriptures. We prayed and sang together – in English, Spanish, and Portuguese. Many of us had friends and loved ones who worked in or near the World Trade Center. We prayed for their safety, of course. We prayed for the families and friends of the lost. We also prayed for peace and justice in the world. And we held onto each other.

Since that day, questions about pluralism that may once have been theoretical, even academic, have come to be widely discussed. Is there a set of values to which all citizens in the West, including immigrants, are expected to adhere? What if those values include freedom of religion, and yet the religious views of some contradict other values, such as tolerance? Is there a limit to tolerance? What is acceptable freedom of expression? Is it acceptable to criticize a minority religion? Does religion even have a role in a multicultural civil society? The implications of such questions need to be explored, and ways of engaging in conversations across different moral frameworks examined, in order for our deliberations on the intersections of science and religion with issues such as ecology and genomics to have any connection to our social realities.

In this context, the activities of multi-faith groups engaged in political action become an important location of discerning pluralist, as opposed to absolutist or relativist, approaches to ethics. I have closely examined the present activity in the United States, where it is at the moment intense, and surveyed it globally, where efforts have been building for over a decade. I have identified patterns of pluralist ethical discernment that, with further development, could be widely applied.

Origins and Contours of a Movement

For this study, I was interested in those groups that fit four criteria: multi-faith, multi-issue, politically active, and who sought membership beyond those who were professionally involved with religion, scholarship or politics. I looked at national and international organizations rather than local groups. There are thousands of local interfaith or multi-faith groups in North America, Europe, Asia, Pacifica, and Africa. Not only was it not possible to survey all of these, but I was looking for groups whose agendas included issues of broad relevance. Many local, as well as national and international, groups are focused on local issues or on interfaith relations per se, rather than specific political issues, as a primary focus. Many others have a single issue – often peace – as their driving objective. I was intent on those who saw issues such as peace or ecojustice in their widest context of social, economic, political, and ecological relations. I also want to acknowledge that there are groups within one faith – including ecumenical groups – that focus on multiple issues. (Kairos in Canada is a good example of this, where ecumenical Christian groups that dealt with distinct issues, such as poverty, health care, and ecology, were brought together under one organization after the 2000 Jubilee.) While they do important work, I was looking for groups with both diverse ethical sources and the widest sets of issues, which would necessitate discovery of links or demand prioritizing among issues. Many of the single-faith multi-issue groups and the single-issue multi-faith groups are included through overlapping connections to the groups on which I have concentrated. The other two criteria, political activism and participation beyond professional scholars or religious leaders, create a situation where theory is always in conversation with practical realities, and the discourse is widely accessible.

Globally, I am looking at groups such as the United Religions Initiative and the Council for a Parliament of World Religions. The latter, particularly, has worked to develop an explicit statement on a global ethic, an effort driven by Hans Küng. In the United States, there are two primary multi-faith groups that represent a resurgence of and a new level of co-ordination among progressive religious activism: Faithful America and the Network of Spiritual Progressives. Faithful America, a multi-faith initiative of the National Council of Churches, first came to my attention when they produced a television ad for Al-Jazeera featuring prominent members of different faiths apologizing for the abuses at Abu Ghraib and insisting that Bush and others did not represent them as people of faith

in America. Presently, Faithful America functions chiefly as an Internet activist group, similar to MoveOn and TrueMajority, through which subscribers are informed about a variety of issues and are given an easy way to contact their political representatives. The Network of Spiritual Progressives (NSP), while also making extensive use of the Internet, has developed face-to-face activities, organizing chapters around the country and in Canada, and convening two national meetings to organize and launch the movement. Of the groups I have been studying, it is the most dynamic and the one most progressive in its positions. Their platform calls for action on global warming and global poverty, but goes further to demand new legislation governing corporations that would enforce social responsibility. Their vision of supporting families includes equal marriage for gay and lesbian couples, an extremely volatile subject in the United States.

Perhaps not surprisingly, people open to engagement with those of other faiths tend to have more politically progressive ideas, whereas those more exclusive about religion remain more religiously and politically conservative (Evans 2006). While the public and political religious voices in the United States have been overwhelmingly conservative over the last three decades, the involvement of religion in progressive causes draws on a long history. The language of the Reverend Dr Martin Luther King, Jr., was unapologetically biblical, and the core of his message about the goals and means of the Civil Rights movement – equality, love, redemption, and reconciliation through nonviolence – drew as much on Mahatma Gandhi and Jesus as it did the Enlightenment philosophies behind the Declaration of Independence and the US Constitution. This religious dimension of the Civil Rights movement of the 1960s is neither singular within nor confined to North America. Faith, and arguments from religion, contributed to the establishment of modern Western democracy, and were integral in the abolition of slavery and apartheid, in promoting temperance, women's suffrage, the anti-Vietnam War movement in the US, and – in Canada – establishment of universal public health care.

This history of religion in the service of progressive politics has been overtaken in more recent decades by another face of religion – absolutist groups within various faiths, not only Islam, but also Judaism, Christianity, and Hinduism. I refer to these groups as 'absolutist' rather than 'fundamentalist' because 'fundamentalism' has associations with a particular historical development of American Christianity. It is also somewhat misleading, since many people who share the same faith but not the same positions as those in extremist, absolutist groups would object that they

are not reflecting what is actually 'fundamental' to the faith. 'Absolutism' is used here to indicate a religious and ethical position which claims singular and absolute truth for one's own beliefs and norms, a more fitting descriptor of these groups.

In the United States there arose the curious mix of televangelism, the 'prosperity gospel', and the political movement that began with the 'Moral Majority', aligning a particular form of conservative Christianity with American political neo-conservatism. This alliance of the political and religious right fused the agendas of free market capitalism and American militarism with a conservative view of sexual morality. Those Christians who originally forged that alignment were opposed to disarmament, racial desegregation of schools, court rulings that prohibited public prayer in government-operated schools, the equal rights amendment (for women – the ERA), and the legalization of abortion. They have lobbied, sometimes with temporary success, to have 'creationism' included in elementary school science curricula. Currently, their official opposition to racial desegregation has been buried, and the ERA is dead; they continue to oppose abortion and support US military power (including the 'war on terrorism'), but opposition to same-sex marriage and stem cell research have come to the fore. Through the efforts of organizations such as the Moral Majority and its successors – the Christian Coalition, the Family Research Council, Focus on the Family, and the American Family Association – extremely conservative Christians have been instrumental in the election of Presidents Reagan and Bush (both father and son), as well as the 1996-2006 Republican majorities in the Congress. The political campaigns of the religious right, which concentrated at first on leadership at higher levels, were later directed to every level, including state legislatures, city councils, and school boards.

They have more recently turned their efforts to the judiciary, and the Institute for Religion and Democracy represents yet another thrust – organizing 'renewal' groups within mainline Protestant denominations such as the Presbyterian, United Methodist, and Episcopal churches to reverse what they see as the 'liberal' swing of these churches. One of the most interesting facets of the religious right is that despite their evident political successes, the sense of fighting a losing cultural battle against the 'liberal' society is still pervasive.

Through the very effective public campaign that conservatives have conducted in the United States over the last thirty-odd years, the word 'liberal' itself has become a term of contempt, leading some to adopt the word 'progressive' as a self-descriptor instead. One of the difficulties is

that some people use the two terms with identical meanings, whereas others want to maintain a distinction: 'liberal' carrying the worldview of the Enlightenment – a modern viewpoint that would stress such things as reason, tolerance, individual rights and liberties – and 'progressive' indicating a somewhat more radical position with a distinct critique of power and established systems, incorporation of group as well as individual rights and responsibilities, and more recognition of the postmodern. The political term 'left' is used, but widely identified as misleading and anachronistic. I use 'progressive' here primarily, and 'left' occasionally, to indicate those who maintain that the provision for those who are vulnerable in a society is foremost the responsibility of the state as the agent of the people, who work for ecological responsibility, who see racism and sexism in systemic terms, and who advocate for non-military responses to conflict and terrorism. Within these broad outlines, there is a wide variety of priorities, objectives, strategies and theories. Indeed, it has been the very diversity and plurality within the left that accounts for some of the inability to counter the conservative tide of the late twentieth and early twenty-first centuries in the United States.

The consequences of the rise of religious right in its US and global varieties have caused people to recoil in horror from the combination of religion and politics. But more recently, they have catalyzed a new impetus for cooperation among people of faith on the left domestically and internationally. The opposition to the Iraq War brought millions of people around the world into the streets in protest together with a sense of common purpose. Similarly, the campaign to 'make poverty history' has involved people of faith on the left in domestic and global politics around poverty. In the US, Hurricane Katrina has illustrated the consequences of governments whose policies have diverted public money from infrastructure and social welfare to militarism and private wealth, graphically connecting issues of imperialism, racism, poverty, and global climate instability. Further, actions of the US government that include eroding the domestic civil liberties on which the country was built, as well as abandoning multinational agreements (particularly the weakening the Geneva Convention by prolonged imprisonment, torture and degradation in the context of hostilities), have driven the progressive religious movement in the United States with a particular intensity and passion (Lerner 2005; 2006; Carter 2005).

I have called it a 'movement'. As such, its significance is not (yet) a matter of numbers, although Taylor Branch, biographer of Martin Luther King, Jr., and chronicler of the Civil Rights movement, told a gathering of

members of the Network of Spiritual Progressives in a rundown church on Capitol Hill in May 2006, that they were more than enough to be a major movement. One aspect of its significance is that it brings complexity to the question of religion in politics. The extreme conservative religious voices of various faiths have been portraying themselves as battling a secular, 'godless', liberal modernity. When religion is relegated to the private sphere, it reinforces that world view. Conversely, when people who share their faith publicly use religious arguments for progressive causes, it gives the lie to this dichotomized view of the world. It may not convince the most adamantly conservative, but it demonstrates a wider set of positions than either/or: either an extreme version of a faith or 'godlessness'.

The history of religious conflict in Europe up to and including the religious wars of the Reformation has shaped the attitudes of that continent and North America toward the subject of the place of religion in the civil society. European countries devised a variety of formal solutions suited to their situations at the time. Those arrangements ranged from state-supported churches geographically determined to an intentionally secular state such as France. In practical rather than formal terms, recognized religious bodies may be supported by the state, but religious practice and belief tend to be regarded as a private concern, with an occasional nod to common Christian history and cultural influence (Germany may be a possible exception).

The United States, which was colonized in part by dissenting religious minorities, some intent on theocracy, devised its solution to conflictual religious plurality in the form of the first amendment to its constitution. This amendment is usually interpreted to prohibit the establishment of religion – the support of the state for one religious body. At the same time, though, it links free exercise of religion with free speech and assembly, as well as a free press and the right to petition the government for grievances. Placing religion in this context implies that religion is connected with political acts of public speech, assembly, and protest. What is prohibited is endorsement of one religious entity or point of view with the power of the state, not the public practice of religion (as long as it is not state-sponsored) or the use of religious ideas and language in public debate. This is an important distinction.

If religious points of view are seen as detrimental to the collective deliberation of civil society, something to be avoided in public debate, this in itself endorses and privileges a worldview that is anti-religious. In his essay in this volume, Patrick Loobuyck has concisely reviewed the history of this exclusionist argument and presents a fuller refutation of it from a

philosophical basis than I will pursue here. As he points out, the idea that 'religion' can be banned from the public sphere erroneously presumes that sphere is or can be value-neutral. Although several philosophers who once overtly promoted an exclusivist position have recently moderated their stand, the idea of a secular ethos that represents a consensus of minimal, distilled, universal values that can enable all of us, 'religious' or not, to live together, is one of the legacies of modernity.

The problem with this position is not only its inaccuracy but what it prevents in terms of full democratic deliberation. By denying that certain operative values in much of the West, such as materialism, and those supported with particular fervor in American civil religion – individualism and market economics – are as much based on 'faith' as any values derived from our religious traditions, these values are entrenched as 'natural' or 'common sense', and the sources for opposing them are limited.

Without religious voices *as religious* in public debate, society as a whole loses the benefit of the wisdom of thousands of years. The distinct messages of religious traditions, their power to inspire us to breathe in the space of generosity and compassion, to suffer the pains of others, to dance with the imagination and the soul, to transcend our narrow interests, to struggle against entrenched power and ways of life that are destructive of humanity and the planet, and to find hope – these are lost to our common thought, and the whole of the society is diminished. Annika den Dikken's essay in this volume is an example of the contribution religious language and ideas can make. She demonstrates that the theological concepts of love and redemption enhance the approach of an ethic of care in a discussion of human enhancement technologies.

It would be a mistake to view this emerging movement in the United States as a mirror image of the religious right, which is one reason why the term 'religious left,' while handy, is misleading. The progressive religious movement certainly opposes many of the positions of the religious right, but among what they oppose is the right's overt and covert perforation of the separation of church and state as provided in the first amendment, such as the inclusion of religious ideology in science education in public schools. In contrast with the religious right, which strategically moved to become a directing power within the Republican Party, the progressive religious movement is nonpartisan. They work within parties to get candidates nominated and elected, but it is not a concerted effort to ally with and direct a single party. Another difference is their sincere desire to find ways out of the polarization that has engulfed American public discourse, while at the same time remaining faithful to their re-

ligious insights and ethical convictions. This desire, along with the diversity within the movement itself, creates the necessity for pluralism in ethics.

Strategies of Ethical Pluralism

Ethical pluralism is related to, but quite distinct from, ethical relativism, the usual alternative to ethical absolutism. Ethical absolutism insists that the true and the good or right and wrong are wholly independent of differences in culture, philosophy, or religion (and identical with what the absolutist holds to be true, good, right or wrong, of course), a stand rejected by the relativist. The relativist views norms and values in the same category as custom and opinion, with no external standard by which those of others can be critiqued. Popular relativist expressions are 'when in Rome' and 'live and let live'.

The relativist position has much to be said for it. Its humility, recognition of the limits of human knowledge, and spirit of generosity and tolerance contrast with the rigidity and conceit of absolutism. The credibility of relativism is bolstered by the evidence of diverse norms and values. But does such descriptive relativism require prescriptive, or normative, relativism? Because it *is* this way does that mean that it *ought* to be? Ethical pluralism incorporates the strengths and insights of relativism – humility, recognition of the limits of knowledge, openness, and to a certain degree, tolerance. But it recognizes the limits and internal contradictions inherent in normative relativism: if tolerance is required, does one tolerate intolerance? If I cannot prescribe norms, can I require you not to prescribe them to me; isn't that itself a norm?

Pluralism is not merely a moderate version of relativism, any more than it is a moderate form of absolutism, because it is willing to declare that there are real evils to be resisted with all moral force, as well as universal goods to be promoted (Hinman 2003). The key distinction from both relativism and absolutism is its approaches to difference and contention, to building agreement and facing disagreement. My purpose is to examine the practices of people who are actively involved in pluralist ethical discourse for the purpose of achieving the common good. What I have found are patterns of pluralism that would serve beyond any particular context.

The strategies of pluralism that I have identified include three elementary moves and a cluster of practices I am calling 'deep pluralism'. The first three moves are elementary both because they each represent where

people normally begin and because they are a prerequisite to deeper pluralism. They are (1) seeking a common moral vocabulary, (2) identifying moral equivalence across traditions, and (3) bracketing acknowledged difference in the service of a prioritized value or goal.

Common Moral Vocabulary

Seeking a common moral vocabulary is the most frequent approach, represented by the statement of the 1993 Council of the Parliament of World Religions 'Towards a Global Ethic'. I have seen two aspects within this strategy. The first is the attempt to translate particular religious values and ideas into 'universal' terms, claimed and comprehended by anyone, 'religious' or not: tolerance, justice, compassion, love, liberty. 'Towards a Global Ethic' claims to have identified a set of core values within religions, but the core values themselves are discussed in terms any humanist would use, without reference to any particular differences in conception. This translation into the 'universal' – meaning non-religious language – is often put to religious voices as an imperative, an expectation of them necessitated by the nature of civil society, since the only shared language is non-religious. Because of this, people within this movement sometimes advocate it as 'the best we can do'. While I would agree that there are circumstances that require it, I would not agree that this is the best or only option. As Jeffrey Stout has pointed out, the act of translation into non-religious terms can disguise authentic motivations, which does not foster relationships of integrity (2004, 72). It erodes the requirements of public trust. It also inhibits any distinctive contribution to the public conversation. The conversation can flatten, become generic and reductive rather than evocative. Religion employs music and the heart in its language. It moves the soul. My problem is not with the tactic itself but with it as a singular, superior, or coerced approach.

The second branch of this strategy does not aim at translation into a 'universal' secular vocabulary, but rather identifying 'widely-shared' terms and ideas that are still recognizably religious or spiritual. For example, Mary Elizabeth Moore says she now chooses the phrase 'transcendent possibilities' instead of 'grace' because the latter does not 'cross well' into multireligious conversation (Network of Spiritual Progressives conference, July 2005). People choose many words and phrases for the divine (instead of 'God') out of consideration for non-theistic religious sensibilities, as 'Toward a Global Ethic' uses 'Ultimate Reality'. I think of the attempts to forge

a common language, universal or widely shared, as the religious version of the kind of moral Esperanto that requires translation into 'neutral' or non-religious language. Such a move is useful, but limited.

Moral Equivalence

The attempt to find moral equivalence across traditions is less like Esperanto and more akin to simultaneous translation; it is the attempt to understand another's tradition on its own terms and function bilingually and even multilingually. At its simplest it is close to trying to find a common moral language, as in the claim that despite different expressions, the kernel of the 'Golden Rule' is present in many traditions, with different formulations. What makes this different from seeking a common moral language is that an original formulation stands and is linked. A clearer example of how this differs from the first strategy is the more complex performance of Ama Zenya when she links concepts of sacrifice across traditions – connecting submission to Allah in Islam with Esther's life-risking act for love of her people in Judaism, the self-emptying of Christ in his Incarnation, and the figure of the Bodhisattva in Buddhism – and contrasts this with the rhetoric of rights (NSP Conference 2005). Here, I think people are doing somewhat intuitively what Kupper et al. have done with their explicit methodology of analysis of focus group conversations about animals and biotechnology. They are retaining the integrity of particular language and looking for conceptual parallels.

Bracketing Difference

The third move, bracketing difference, also has two aspects. The simpler one is the recognition that different motivations for trying to accomplish the same end need not hinder action. As Patrick Loobuyck rightly observes in this volume, concepts of justice and justifications for human rights can be incommensurable, yet the goal of human rights is shared. This works easily when the goal is urgent or as compelling as human rights and actually may create the environment in which other strategies of pluralism, including those above, can take root.

The trickier aspect is when people share some convictions, but not others, and they decide that the shared convictions are of such priority that they can work together while they differ, even deeply, on other matters.

Where I see this strategy evolving is in the participation of some (not all) Evangelicals and Roman Catholics in this movement. I refer to those who may continue to oppose equal marriage and legal abortion, but have decided that poverty, war, materialism and the destruction of our environment are more pressing *moral* issues, more of a threat to families and the general society.

This aspect is tricky not only because it's more difficult, but because it can set up a situation of repressed difference, where those whose lives are more directly affected by issues that are deemed of less priority could feel ignored and demeaned, stoking resentment and fracturing alliances. An example would be the possibility that the willingness of Evangelicals and Roman Catholics to work within the movement on war, poverty, and ecological issues engenders a corresponding spirit of compromise so that advocacy for equal marriage, for instance, is marginalized. This is a potential outcome, not inevitable but certainly possible. The hopeful possibility is that relationships built by working side by side, discovering shared values, will be able to sustain work on the more difficult issues, and the question of what serves human dignity in sexuality is pursued in that spirit. But in order to do this, I think it takes moving into a deep form of pluralism.

Deep Pluralism

Deep pluralism is a more complex phenomenon than the elementary strategies outlined above. Its practice presumes at least the goodwill toward others that the elementary moves demonstrate and the level of knowledge that finding moral equivalence does. But pluralism must go beyond trying to find similarities and commonalities. It must deal with difference and conflict at times, not simply set them aside. Difference here means not only difference in sources, principles, values, practices or ideas. Dealing with difference means going to the meta-ethical level, paying attention to the contextual relationships, particularly differences in power and privilege, and what is probably the most challenging area, recognizing different *methods* of deliberation.

Working toward common statements of principle may be useful, but care is needed so as not to privilege the philosophical or cultural practices of some over others. Ethical deliberation is not limited to discerning, prioritizing, and applying principles, but occurs through various practices – narrative, poetry, art, ritual. These media have different standings and inflections in different religions and cultures. Deep pluralism would call

for attending to one another's stories, for example, without trying to re-duce them to an abstract principle, and learning 'how they mean' in their original context.

Recognizing power and privilege differences goes beyond even this to discern how power relationships shape the meaning of events and prac-tices. For example, take political cartoons, something that not long ago caused passionate reactions, even violence. In common Western practice this medium is normally used to ridicule a powerful person or group in order to check that power in a democratic context. As such it is a treasured form of liberty. But the dynamic is different when a cartoon characterizes a minority race or religion as a threat to a majority group in a context of fear, as the National Socialists did with cartoons in the 1920s and 1930s, and, I would contend, as was happening in the recent Danish case. A radi-cally different purpose is at work, one that is a danger of democracy. Deep pluralism explores such differences in contexts and purposes; it does not rest at abstract principles of 'tolerance' or press freedom.

Creating the space for deeply pluralist conversation takes time, per-sonal interaction, attention to power and privilege, and the courage to step outside one's own way of seeing the world. The organizations I have named above, and many others whose agendas or constituencies may be more limited, have been moving in this direction. The Network of Spiri-tual Progressives has observed that despite efforts to reach out to more communities of colour, including providing free registration and trans-portation to the Washington conference and recruiting presenters from racial minority groups, their constituency is still predominately white. Further study would be needed to investigate whether this is a factor of the substance of the Network's positions or is related more to process and context. Several members of the Network who are members of minority groups are undertaking an effort within their own communities to in-crease their representation. The Network also has less youth participation than would be expected, given the activity of youth in anti-war and anti-globalization movements. This may be related to a growing alienation of many youth from religion in a country where conservative religious voices have dominated the public consciousness.

Beyond attention to context and power, and a holistic approach to communication and deliberation, a deeply pluralist conversation is one in which disputes are handled in a radically different way than both absolut-ism and relativism, which both lead more often than not to impasse. Rela-tivism recognizes the validity of multiple moral frameworks, but has very few resources to deal with conflicts between frameworks beyond agreeing

to disagree. Absolutism recognizes only its own moral framework as legitimate and tries to persuade the other to conform to it. A deeply pluralist conversation does not try to persuade one who differs out of one's own framework, but enters into a conversation characterized by three things: a positive attitude toward conflict itself, willingness to 'think with' the other's moral language and reference, and openness to change. By a positive attitude toward conflict, I mean viewing conflict as an opportunity to see things from a different angle and so expand understanding, and to work to identify the good beneath positions and claims. 'Thinking with' the other involves what Jeffrey Stout terms 'immanent criticism', a Socratic conversation that takes the other side seriously enough to make an attempt to use another's convictions to give reasons for one's own conclusion (2004, 72). This is incomplete as a deeply pluralist conversation, however, unless the process operates in more than one direction, in other words, that all the partners of a conversation are as willing to be challenged as they are to challenge. In Lawrence M. Hinman's terms, this is the pluralist principle of fallibility. We must be willing and prepared to learn from others and 'to have some of our own moral shortcomings revealed to us by them' (2003, 58). This is a tall order, of course. Glimpses of the emergence of such conversations are rare, and they are tentative in nature.

One surprising area where I see this emerging is the discussion of abortion in the United States. Those who advocate that abortion should be 'legal, safe, and rare' are shifting from a rigid rhetoric about rights to employ the language of 'pro-life', in its fullest implications: the mother's life, access to health care, and the quality of the lives of children. They are conceding that some limits on abortion may be warranted. That this issue, which has starkly divided the conservative and progressive camps in the United States in bitter opposition, is an area where pluralist ethical discourse is being brought to bear is a hopeful sign that these patterns can be employed beyond a circle of fellow travelers.

In a world where religion can be used as a rationale for violence, or deemed irrelevant, it is crucial to attend to its potential to motivate us toward justice and compassion, the bases of ecological wholeness and peace. This may sound idealistic and unrealistic. The patterns identified above may seem feeble in the face of the hatred and violence erupting around us. But consider the alternative: Is it practical to devote ever increasing resources to vigilance and destruction, while thousands die daily of hunger and preventable disease, and the life of the planet is being sapped away? Hypervigilance regarding security will weary us, and the exercise of force is proving counterproductive. These can only be short-term measures,

because they will fail in the long term. The strategies of pluralism are demanding, yes, and more demanding the deeper we go. Education of enough people in multiple world views to be capable of pluralist conversation is critical, as is the cultivation of the grace of humility and hospitality to the stranger that all of our religious traditions – at their best – foster.

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