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“PLAYING GOD? YES!” RELIGION IN THE LIGHT OF TECHNOLOGY

by Willem B. Drees

Abstract. If we appeal to God when our technology (including medicine) fails, we assume a “God of the gaps.” It is religiously preferable to appreciate technological competence. Our successes challenge, however, religious convictions. Modifying words and images is not enough, as technology affects theology more deeply. This is illustrated by the history of chemistry. Chemistry has been perceived as wanting to transform and purify reality rather than to understand the created order. Thus, unlike biology and physics, chemistry did not provide a fertile basis for natural theologies. It is argued that an active, transformative role of humans is appropriate in biblically inspired religions and called for in the light of imperfections and evil in the world. When the expression “playing God” is used dismissively, as if we trespass upon God-given territory, a theologically problematic association of God and the given order is assumed. A different view of the human calling can be articulated by drawing upon the Christian heritage and by developing an antinatural religious naturalism.

Keywords: chemistry and religion; co-creation; evil; God of the gaps; playing God; religious naturalism; stewardship; technology.

A surgeon stands by my bed. She explains what she intends 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 so as to get rid of her.” I am down.

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A pastor stands beside 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" (RSV). 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 so as to get rid of her." It does not bother me at all.

THE GOD OF THE GAPS IN TECHNOLOGY

From the surgeon, the pilot, and the engineer who designs a bridge we demand professional competence, and rightly so. (The example of the surgeon was made up; it does not reflect the responsibility of those who train doctors.) With the pastor, and in ordinary contacts between one human and another, 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 close such resources and do more harm than good; read the Book of Job). 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 will many of us be tempted to spend money on aura-reading, pulverized shark cartilage (a "cure" for cancer in the Dutch pseudomedical circuit), 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 holes in our knowledge, on limitations in 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, electric light, water drainage, computers, the contraceptive pill, and whatever. When the doctor fails, when there is no cure yet, we fall back upon God or on other elements from the rich treasury of (pseudo-)religious offerings. The expression "God of the gaps" may have its home in conversa-

tions on the theoretical side of science, where too many believers are anxiously looking for what science is unable to explain (yet). However, a similar danger arises in the context of the practical side of science—to look for God when our human skills fall still short of what we wish we could do. 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.

Against 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 appreciate them not only commercially but also religiously. When the computer in the plane or in 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 RSV). We look to the engineers for our salvation. This is not to be seen as an antireligious move, as we may appreciate their knowledge and skills as gifts of God, as possibilities to serve the neighbor “with all your heart, and with all your soul, and with all your strength, and with all your mind” (Luke 10:27 RSV).

Back to the story of the surgeon and the chaplain. If we appreciate the competence of the surgeon, what is left for the chaplain? If our health is a technical problem that needs to be fixed, why would we be interested in and even be moved by Psalm 139? In the following, I first return to Psalm 139 and, more broadly, to the quest for adequate words and images. However, we desire not only stories but stories that we can take realistically. New images alone are not enough. If we reject a god in the gaps of our technological powers, how might we then envisage humans and their role in reality and God in an age of technology? I approach this via brief reflections on the history of chemistry and theology and on biblical and theological roots of images of humans as stewards or co-creators. The final sections deal with the religious interest in transformation of the world, objections against “playing God,” and the perspective of articulating an antinaturalistic role of humans in biblical and naturalistic religious perspectives.

Biblical references are used here as an attempt to reflect upon our own conceptions in the light of our own traditions. Thus, I will be drawing liberally on the biblical tradition and on Christian theological articulations, appreciating such traditions as formative (rather than as normative) and exploring some of their potential.

NEW STORIES AND IMAGES

Despite technology, including advanced medical techniques, we humans are as we have always been—insecure and frightened, with hopes and sorrows. And gullible; the e-mail virus that spread with the “I love you” letter

had a huge impact, even among the technologically literate. We may have to do with new technologies, but we suffer from old temptations, old virtues and vices. Faith in a technological culture is not that different from what it has been, because we humans are not that different—we are still vulnerable, still looking for orientation, for something to hold on to, for a song that strengthens us.

We need songs and stories. But can we continue “the old, old story,” as the well-known hymn has it, or do we need new words? Of Psalm 139 there is a new version, somewhere in the wonderful world of the Internet.¹ some of its verses are as follows:

O Lord, You have searched me and You have accessed me
 You know my logging on and my logging off.
 You discern my outlook from afar.
 You mark when I surf and when I download,
 All my cache lies open for You. . . .

If I take the links of AltaVista
 And dwell at the innermost ends of the Net
 Even there your cookies would find me
 Your mouse hand holds me fast. . . .

O God that You would slay the viruses
 Keep away from me hacking hands
 With deceit they act against us
 And set our hard drives at naught. . . .

O scan me God, and know my directories
 Defragment me and know my files
 See that I enter not the wrong password
 And highlight for me the paths of life eternal.

I find this a creative translation and re-imagination. New articulations are welcome; we need not be limited to images from a nomadic and agricultural setting, say, of a shepherd with sheep, cutely misunderstood. We are addressed directly by images and words that relate the tradition creatively with our own situation.

But new words are not sufficient for faith in a technological culture. We do not just express the same conviction with new words. It is not as with Pentecost—the same message for all, each in his or her language. The content has changed as well. For instance, who is the one who knows me better than I know myself? Is that not Microsoft, or Intel, or whatever names those companies have? And where would we go for shelter? Is that not with Symantec, Norton, and the other virus-scan programs? That is where we go for help, and rightly so. If the computer breaks down, on my desk or on board a plane, it is no good if the people of the helpdesk replace the prayer “O that you would slay the wicked, O God” by the new version, “O God, that you would slay the viruses.” Our knowledge and power have increased, and so has our responsibility.

The anthropologist Clifford Geertz (1973, 90) defined a religion as “(1) a system of symbols which acts to (2) establish powerful, pervasive and long-lasting moods and motivations in men by (3) formulating conceptions of a general order of existence and (4) clothing these conceptions with such an aura of facticity that (5) the moods and motivations seem uniquely realistic.” In this definition, stories and images are essential, as they are manifest forms of symbols that influence moods and motivations, but they can only do so consistently if the stories and images are understood to reflect to some extent the way the world really is. We can be moved by the Harry Potter stories and other fiction, but they carry us beyond *divertissement* only if we acknowledge their nonreality (and thus the ways in which they should not be taken too seriously) *and* their realism about human nature, friendship, good and evil, or whatever (and thus that they reflect the way things really are). That is, in my perception, what makes stories such as the *Powers of Ten* film referred to by Tom Rockwell so attractive: it gives us a sense of “home” by locating us in a credible view of “the way things are” (see Rockwell 2002, pp. 605–21 in this issue). A rewording of a religious heritage, such as the one of Psalm 139 above, cannot be sufficient if it does not address changing conceptions of reality and of our own technological powers to modify reality. We need to face such changes in our understanding of reality and of the human role in it.

TECHNOLOGY AND RELIGION IN THE MIRROR OF HISTORY

Technology influences our understanding of reality. To get a better sense of the religious implications of this influence, let us make a brief excursion into the history of chemistry and religion. In general, interest in the technological and artificial fits ill with the European and especially British traditions of natural theology, of arguing from nature to its Author, as John Brooke and Geoffrey Cantor (1998) observe in the final chapter of their study. They quote the political radical Richard Carlile, who wrote in 1829: “With the doctrine of an intelligent deity it is presumption to attempt anything toward human improvement. Without the doctrine, it is not any presumption” (1998, 314). Brooke and Cantor add: “It is as if arguments for divine wisdom require this to be the best of all possible worlds, with the corollary that attempts at improvement would both be sacrilegious and ineffective” (p. 314). Traditionally, natural theologies have been based on sciences that observe and describe nature, such as astronomy and physics, but also on the study of insects and other life forms. Chemistry as a transformative discipline is almost completely absent from this discourse.

When one delves into the history of science and religion, one finds that the history of chemistry is quite different from the histories of physics and astronomy, which usually serve as prime reference points for “the scientific revolution.” In physics and astronomy, one could see a divine king at

work, a transcendent sovereign who gave nature its laws. This has been captured in phrases such as “contingent order” (Torrance 1981)—*contingent*, referring to a voluntarist strand in creation theology, which necessitates empirical work, and *order*, regularities that could be discovered.

The history of chemistry, alchemy, and early forms of medicine is more related to a spiritualist tradition. In his *Religious Origins of Modern Science* (1977) Eugene M. Klaaren pays serious attention to spiritualist views of creation, as found among enthusiasts of the radical reformation, in Renaissance Platonism, and among those interested in the alleged writings of Hermes Trismegistus. A major representative of this view was the Dutch chemist Johan Baptist van Helmont, a disciple of Paracelsus. Van Helmont preferred spiritualist, organic motifs rather than legal or mechanistic ones. For Van Helmont, chemistry was more than knowledge; in his *Oriatrike* (LX: 66) he wrote, “Finally, and finally, Chymistry, as for its perfection doth prepare an universal Solver, whereby all things do return into their first Being, and do afford their native endowments, the original blemishes of Bodies are cleansed, and that their inhumane cruelty being forsaken, there is opportunity for them to obtain great and undeclarable restoration and purification.” Van Helmont saw chemistry as an attempt “to realize God’s own work of restoration and new creation, for purification and perfection are one” (in Klaaren 1977, 80). Such a spiritualism was conducive to the emergence of modern science, as it supported interest in particular observations and distanced itself from Aristotelian natural philosophy.

Aside from introducing the theme of purification, in a material and a spiritual sense, chemistry also correlates often, as Brooke and Cantor observe, with a “kind of process theology” (1998, 315), not in the technical sense of today (as based on Whitehead and Hartshorne) but as a view that saw in the world a collaboration of humans with God. We will come back to Christian theology, but I offer first some comments on images of the human role.

AN ACTIVE HUMAN ROLE

We not only appreciate technology, we are ourselves its creators. How may we articulate religiously this active side of the human presence? Within the ambience of Christian thought, one finds reference to humans as stewards and as co-creators. To explore the difference, let me offer a summary of the Bible in a single sentence. According to the Bible, the world begins on high, with paradise, which is followed by a long and troublesome journey through history, with the expectation of final salvation. The liturgy reflects this U-shaped profile (Frye 1982, 169) in its emphasis on memory and on hope. The Sabbath recalls the Creation and the Exodus and is a foretaste of fulfillment (see Terrien 1978). This U-shaped profile implies that images of the good are present in two varieties, as images of the past

(paradise) and as images of a city of God, a new heaven and a new earth, the kingdom to come. If humans are considered stewards, we look back in time to a good situation, which has to be kept and preserved. If humans are addressed as co-creators, our eyes are mainly on the future, on that which might come.

In relation to our theme, the use of human knowledge and power, some of the stories regarding Jesus may be illuminating as well. In the synagogue Jesus meets someone with a withered hand. Will he do healings on the sabbath? Then Jesus asks: "Is it lawful on the sabbath to do good or to do harm, to save life or to kill?" The priority is clear. In this story of healing (from Mark 3) and in many other stories, a human is freed of the burdens of his past. A tax collector and a prostitute are again on the way of life, the possessed relax, and deaf persons hear. The social dimension, which can also be found in the stories related to the prophets, is also found here. Especially those who have been less well off get new chances. Discipleship as serving the poor and needy has often been forgotten, but it has resurfaced again and again in the history of Christianity, resulting in particular in care for orphans, widows, and people who are seriously ill.

One parable explicitly about stewardship is Matthew 25:14–30. A landlord about to leave entrusts his property to three servants. One receives five talents, one two talents, and the third one talent, "to each according to his ability." The story is familiar. The one with five talents makes another five; the one with two talents makes two more; the one with one talent buries it and returns it to his master. In the end, the landlord commands that the worthless servant be cast into the outer darkness, where men weep and gnash their teeth.

From this brief tour of biblical texts and images I retain the following insights: (1) in biblical language the good is to be found not only in the past but also in the future; (2) humans, even when considered stewards, can be active and even ought to be active, although the initiative is with God; and (3) this activity is normatively determined as care for the weak and needy.

THE TRANSFORMATION OF THE WORLD

Stewardship has become prominent in reflection upon the ecological damage that human beings have done (Hall 1990). In that context, stewardship has the connotation of nature conservation. Stewardship fits better reticence than actively changing nature. But human activity is not only a threat to God's good creation. It has also been seen as taking up what God entrusted to us: to work for the good, under the guidance of the Holy Spirit. Dorothee Sölle, a theologian who has emphasized human activity, wrote *To Love and to Work: A Theology of Creation* (1984), in which she appeals primarily to church members who neglect the social engagement

of the gospel. She emphasizes our responsibility in the world and reminds us that our engagement has to be nourished by our faith. Human creativity does not diminish God. To the contrary, the more one develops one's creativity, the more one works on one's liberation project and surpasses one's limitations, the more God becomes God.

Stronger words have been used by Isabel Carter Heyward in her book *The Redemption of God* (1982). God is not so much the one who redeems us as the one who needs to be redeemed. The suffering of innocent children ends for her any theodicy. How can one justify God in the presence of burning children? For her it means we need to think differently about God and also about ourselves. We cannot shift the burden of responsibility to God; we are responsible. This insight makes hers a voice relevant in the present context—when we do not express moral outrage at extreme evil perpetrated by humans but, instead, reflect upon our technological powers. Our task becomes to make God present in the world, or, as she says it with a remarkable verb, our task is to “god in the world” (Heyward 1982, 163). The issue is that we are in such theological projects not primarily doing theology on the basis of positive experiences of beauty and goodness but rather out of engagement with justice and love, out of a vision of this world made better. Rather than order, the central theological theme is transformation.

In contrast, in natural theology, the tendency is to appreciate the actual state of affairs as deserving of wonder. Natural theologies arising out of experiences with the natural world mostly lack interest in transformation; that is why in this discourse chemistry is not as prominent as biology or physics. However, theology should, in my opinion, attempt to disclose the possibilities for transformation of the natural order. Unavoidably, this also introduces questions about aims, goals, or norms—issues of values aside from facts, of axiology aside from ontology. Not only natural theologies but also a theology with a strong liberationist tendency, one that acknowledges the depth of the human technological ability to transform reality, requires a metaphysics that is adequate relative to what we know and to what we find ourselves able to do. I do not have such a metaphysics and axiology, but I want to indicate here that technology does raise issues for cosmology, for axiology, and for the way these two are combined in a theology or religious worldview.

With respect to cosmology, technology requires us to envisage not only the real but also the possible, not just order and laws but also flexibility (but not only flexibility either, as technology is victorious over the laws by obeying them; think of flying and gravity). With respect to axiology, technology requires us to consider the expansion of the domain of choices, an issue to which we return below. Focusing on technology might make us sensitive to elements neglected when we focus on science mainly as a source of understanding rather than as a source of transformative power.

PLAYING GOD

Sometimes the concern is voiced that we go too far in our technological activities, that we are "playing God." This metaphor has been used recently in debates on genetic modification and on cloning. Less than a century ago similar images 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 United States heard the preacher fulminate against those "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 had 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 indiscriminating 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 nonbelievers find "playing God" a useful metaphor in criticizing new technologies? The American philosopher Ronald Dworkin (1999) suggested that it is because some 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 is our own responsibility. 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. We assume a clear demarcation between who we are, whether the product of divine providence or of blind chance, and what we do in the situation in which we find ourselves. 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 notion of playing God arises. There is a reference to "God" when something that was experienced as a given 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 on our side of the boundary, but rather the fear of losing a 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 regarding 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, and God—at least, if God is associated with that which has been given, often identified with creation. If God is seen thus, human technological activity will be seen as pushing God back to the margin. Antibiotics and contraceptive measures have contributed more to secularization in Western cultures than Darwin did; practices are more important than ideas. This God who is pushed to the margin is a God of the gaps, as considered earlier.

ANTINATURALIST NATURALISM OR BIBLICAL RELIGIOSITY

If we do not accept this God of the gaps, how to 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.

Naturalism faces a different challenge. In operating mainly on the basis of “what is,” a strictly naturalistic philosophy has difficulty in articulating normative ideals (see Drees 2000, 851–52). In the present context, the concern is not about the derivability of norms from facts. That would be an epistemological issue—of how we can have knowledge of, or legitimize, certain norms. This is often discussed as “the naturalistic fallacy,” that is, the logical impossibility of deriving norms (“ought”) from facts (“is”), a fallacy that may arise in ethics and in epistemology. My concern is not of this epistemological kind. One may well reject the naturalistic fallacy as a pattern of reasoning and still appreciate this world as the best of all possible worlds, believing that this world is, deep down, good or sacred. However, if we engage in technology, we seem to assume that the world can be improved. Thus, I have argued that the history of theology and chemistry (chemistry as an example of technology) has been different from the history of theology and biology or theology and physics, precisely because in those latter sciences human action modifying reality was not central, whereas in chemistry it was.

Let me give a brief dialogue between an optimist and a pessimist to illustrate that the issue is not an empirical one or an epistemic one about seeking to derive norms from facts but a matter of valuation (even though empirical knowledge may be part of the larger worldview that sustains the attitude as well). An optimist says, “I believe that this is the best of all possible worlds.” A pessimist replies, “I am afraid you may be right, that this is the best of all possible worlds.” Religious naturalism has been articulated in relation to sources of knowledge (rejecting claims to authority for particular documents, appeals to special revelation, or uncontrollable personal intuition) and in debates about supernaturalism and transcendence. It is not articulated primarily in relation to the appreciation of reality, as both the optimist and the pessimist of our dialogue may be natu-

ralists. However, those naturalists who side with the pessimist in acknowledging the reality of imperfections and evil and who acknowledge the desire to improve rather than merely affirm nature face the challenge of avoiding the treating of the given as normative. Somehow we (as I am among such religious naturalists) need to think through the possibility of an “antinatural religious naturalism.”

If we shift the vocabulary again and draw upon the Christian heritage, we find that quite a variety of attitudes may be articulated. 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 the arguments of natural theology. 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 that light humans are not merely stewards who are to keep and preserve what has been given. Humans are also addressed as persons who should abandon their old ways and take the risk of living in a new way (Exodus, Pentecost); they are called to renew themselves and the world. In the Christian tradition there has been from its very beginning (as the first major heresy, that of Marcion, testifies) 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 the given; in contrast, technology could be part of the Christian calling. Or, to return to the naturalistic vocabulary, sensible religious naturalists might share this responsibility by not emphasizing the given as normative but thinking through the possibility of an antinatural religious naturalism.

NOTES

This article is based on a presentation at the IRAS conference “Human Meaning in a Technological Culture” held at Star Island in Summer 2001; comments and queries by Michael Cavanaugh and Ursula Goodenough on “irasnet” in September 2001 stimulated me to develop more explicitly my remarks on naturalism and the naturalistic fallacy. Some material was already used in my contribution “Technology and Religion” in the *Currents in Theology and Mission* Festschrift for Philip Hefner (Drees 2001). On the history of chemistry and religion, I reused material discussed in Drees 1996, 79–81; on the theological relevance of transformation I drew upon Drees 1990, 150–54).

1. I received this “Psalm 139” via someone else and have not been able to trace the origin of this creative rewriting.

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