

A Framework for Christian-informed Medical Ethics

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Samevatting

Hierdie artikel stel 'n raamwerk vir 'n Christelik-georiënteerde mediese etiek voor. Die konteks waarbinne hierdie etiek geformuleer moet word, word deur twee dominante ideologieë oorheers: die tegnologiesisme en die postmodernisme. Tegnologiesisme betoog dat alles moontlik is – alles wat gemaak kan word, moet gemaak word. Die postmodernisme huldig die perspektief dat daar geen absolute waarhede is nie en dat elke mens die verwysingsraamwerk van sy/haar waarheid is. In hierdie artikel word mediese etiek gedefinieer as normatiewe getrouheid in die behandeling van pasiënte. Die raamwerk vir 'n Christelike mediese etiek word gebou op die heiligheid van en respek vir lewe. 'n Gevallestudie, “The serpent was here” word bespreek. Met hierdie gevallestudie word aangedui hoe 'n normatiewe besluit geneem kan word in 'n situasie wat deur genoemde ideologieë oorheers word. Die artikel neem ook verskillende denkstrome in ag en wys hoe 'n Christelike etiek daarop sal reageer. Die artikel sluit af met riglyne vir 'n Christelike mediese etiek.

1. Orientation

In June 2000 the medical sciences were changed forever, owing to the mapping of the DNA structure. *Time Magazine* (3 July 2000) reported that the significance of this achievement could not be overstated. The human genome project will enable scientists to unravel the secrets of human health and disease at the molecular level. This remarkable success has complemented the already dominant role of **technology** in the medical sciences, since bio-technology was instrumental in this approach. Technology confirmed the suggestion that everything that can be done, should be done. This, in spite of the already negative reaction to a technology-dominated medical environment (see for example Van den Berg, 1969; Strijbos, 1985; Schuurman, 1997). This doesn't mean that technology is all negative: it does have its advantages as well. Reproductive technology,

for example, brings biological parenthood potentially within the reach of couples who would otherwise have been left unfulfilled. If it was not for technology, then sophisticated treatments such as open heart surgery and cancer treatment would not have been possible at all.

But technology and its religion, the *Machbarkeit aller Dinge*, are no longer the only chorus in medical science. The *zeitgeist* is also influenced by **post-modern philosophy**. Post-modern philosophy advocates the conviction that there are no absolute truths. Truth lies within oneself. The human being has become the reference for his/her own truths. His/her rationality is the condition for religion (see Du Toit, 2000; Strauss, 2002b). Trustworthy lives are more important than abstracted truths (Koopman & Vosloo, 2002:30). Post-modernism has therefore to do with a state of mind. An example of this can be found in the consumer society, which promotes the idea that everything can be fixed, re-done or replaced. Modern culture is now characterised by needs and wants, substitution, replacement, make-over, etcetera. (see Koopman & Vosloo, 2002:31; Crane & Matten, 2004).

Within this context the burning question is whether there is still room left for Christian-informed medical sciences. Is a Christian-medical ethic still needed? These questions originate from the debate on, amongst other things, abortion, euthanasia, bio-medicine and human cloning. The (South African) abortion legislation promotes the freedom of choice (the decision rests upon the women's view on life – post-modern influence); human cloning is possible due to bio-medicine (technology can create my exact duplicate) and a decline in human value is sufficient to execute euthanasia (replacement culture). It is unrealistic simply to argue that Christian-informed medical ethics should ignore the current *zeitgeist*. This article is therefore an attempt to indicate the role for Christian-informed medical ethics in a society characterised by technological domination and post-modern views.

2. Conceptualisation: a working definition for christian-informed medical ethics

2.1 A basic definition for ethics

Four approaches can be followed in defining ethics:

A descriptive perspective

Smit (2004) says ethics is not something removed from everyday life. It is what we do and what we do not do. Ethics directs all our activities. It is for this reason that virtues are important in ethics (see Vosloo, 2004). In

the context of virtue ethics Koopman & Vosloo (2002: 60 - 76) argue that the question “*What should I do?*” (therefore *What is good behaviour?*) depends on the question “*Who am I?*” (therefore *the identity of the moral person*). For Christian ethics it is not so much a question of *Who I am?* but much more *To whom do I belong?* Christian ethics has therefore to do with the relationship between God and man. Man’s virtues are vested in the virtues of God. Following on this will be an ethics of responsibility. Du Raan and Louw (1997: 121) denote an ethic of responsibility a *theonomic* ethic. This refers to an ethic based on the relationship with God and a community of believers. This ethic can be linked to Heyns’ view of a theology of obedience. According to this view man is called to behave responsibly as a member of the kingdom of God (see Heyns, 1972) for a detailed discussion on obedience and responsibility).

From a descriptive perspective it is quite evident that ethics entails much more than just a choice between right and wrong. Essentially, it involves attitudes and a positive relationship with God and one’s fellow man.

An etymological perspective

Ethics is derived from the Greek word “ethos” or “èthos”, which means habit, morality, or habitat, which denotes the idea of one being at home/comfortable with one’s normative behaviour (Douma, 1983: 10) and custom and tradition (Grace & Cohen, 1996: 12). Next to ethics, there is also morality. Morality derives from the Latin “mos” which is equivalent to the Greek “ethos” (Douma, 1983: 10, 11; Grace & Cohen, 1996: 12). Although there is no difference between ethics and morality, morality is often used to indicate the traditional and current morality while ethics is used to denote the study of morality (Douma, 1983: 11). Another perspective presented by Badaracco (1998: 3) is that although ethics and morality are interchangeable, the word “moral” is often reserved for issues involving personal beliefs and values, while “ethics” is used to describe principles of right and wrong or justice and fairness governing social conduct. In essence, ethics is all about what is right and what is wrong (see Velema, 1990). For Grace & Cohen (1996: 12) ethics involves custom and reflection (see also Koopmans, 2004).

The shortcoming in an etymological perspective is that it limits ethics to the categories of should and should not. Something like the relational characteristic of ethics is mainly absent.

A cosmological perspective

According to the cosmological perspective articulated by the Dutch philosopher, Herman Dooyeweerd, there are 15 aspects of reality within

which man experiences life. These aspects are interwoven with each other: in defining a particular kind of ethical issue (for example medical ethics) it is important to understand the core of the individual aspects of reality. One of the aspects is ethics. The core of ethics is love [as distinguished from religious love (central love command) and erotic/romantic love]. This love has to do with *moral faithfulness/truthfulness*. From the cosmological perspective one can conclude that ethics is about moral love (see Smit, 1985; Uys & Smit, 1985).

This view brings us closer to the central love command and man's interaction with other people and society (relational perspective).

The role of the ethos

Smit (2000: 15) says that no ethics can be defined as free from the influence of religious belief, life and worldviews and tradition and culture. This is in line with the Reformational tradition that no science is neutral, and that an "objective view" on facts therefore does not exist. For him Ethics as a science has two manifestations (Smit, 1985: 1): firstly there is *philosophical ethics* which "(treats) ethics as a totality theme and indicates the cosmological and anthropological place of the ethical". Secondly there is *subject ethics* which "(studies) human behaviour and community structures from a modal-ethical point of view". In both kinds of ethics, ethos is a guiding principle. Ethos is that which appeals to the heart of man and is the reason/motive for doing something. Ethics is therefore the science of the normative. The value of the role of the ethos is that it calls on man's conviction as a religious person (see Du Raan & Louw, 1997: 121 and Velema, 1990: 13, 17).

For the purposes of this article the author would like to define *ethics as normative faithfulness/truthfulness in all human behaviour and activities*.

2.2 A basic definition of medical ethics

Based on the working definition for ethics the author would like to follow an integration model in defining medical ethics. The integration model combines medicine (care/treatment of human life) with ethics (normative faithfulness/truthfulness). *From this perspective medical ethics can be defined as the normative faithfulness/truthfulness in the treatment of patients*. This is evident through the integration of values in medicine. By *value* we mean that people should be treated in good faith. The life of the patient should in no way be placed at risk because of medical treatment. From a common religious point of view this means that a patient should be treated in such a way that the holiness of human life is respected. According

to the Christian ethos it means that Biblical guidelines will direct ethical behaviour and the treatment of patients (Smit, 1985; Uys & Smit, 1985).

Normative faithfulness/truthfulness in the treatment of patients should be reflected in issues such as human dignity, autonomy, informed consent, vulnerable persons, confidentiality, the lack of harm, and so on (see the Medical Research Council of South Africa's ethical guidelines in <http://www.mrc.ac.za/ethics/ethicshuman.htm>).

3. A Christian synopsis on human life and its meaning for medical ethics

Ethics cannot be separated from anthropology (Smit, 1985: 152). It is for this reason that we need to understand man. Christian ethics will appreciate man in the context of the Bible. Exodus 20: 13 in the *Biblia Hebraica Stuttgartensia* text reads that no man has the right to take a life unlawfully. This commandment deals exclusively with the sanctity of life (Velema, 1996: 32, 33; Van der Walt, 2003: 100ff; Goosen & Louw, 2003; Psalms 8 and 139.) A valuable application of the sixth commandment to human life (see Lategan, 1999: 1133) entails that:

- God is the Giver of all life.
- No man has the right to take any person's life.
- All human life has the qualification of human life and cannot be reduced to something less than this.
- All life is sacred.

From the sixth commandment the following values for human life can be identified:

- The preservation of life
- Recognition of the uniqueness of people and their personal values, faith and traditions
- The protection of dignity and the welfare of the individual
- Freedom of choice
- The right to basic medical care
- Suffering should be relieved
- Every person's need for justice, affection and esteem

Applied to a Christian medical ethic the guideline will be that no man is ever fabricated simply according to taste. Man is not a product of industry. Man is no "laboratory product."

4. Comments on the influence of the *zeitgeist* in medical practice

4.1 *Technological influences*

The overshadowing of reality by technology results in what Schuurman (1997: 74) calls **technicism**. He defines technicism as the human pretension to bend reality to human will autonomously and through the use of scientific-technological control.

The domination of reality by technique and the control over nature with the aid of tools are at odds with the positive culture command given to man (Genesis 1: 28 and 2: 15). The intention of the cultural mandate is never to exploit creation and that all development should be sustainable and directed at the protection of the creation against the never-ending needs of mankind (see Van Rooy, 1996, for a detailed explanation of these two Scriptures.) No technology and technique should go without an ethical appreciation thereof (see Stellingwerf, 2004, for his discussion on the philosophy of technology). Vos (1982: 134) indicates that the words **abad** and **somar** used in Genesis, express the idea of “serving” and “caring”. Technique provides for man’s material needs and makes a wide variety of rewarding jobs and tasks possible. Needless to say, the development of man’s technical abilities has contributed greatly to his quality of life. Unfortunately, technique is sometimes misused because of the sinful nature of man. The first signs are found in the belief that everything that can be done, should be done. It is for this reason that an **instrumentalistic** approach to technology should be avoided as far as possible. In this context, philosophers such as De Vries (1997) and Schuurman (1977, 1985, 1997) plea for an ethical appreciation of technology. Van Rooy (1996) adds his voice in saying that the challenges of technology are not addressed if they are ignored or relativised. What is needed is not more development for the sake of development but rather development to address the needs of people.

My concern with technology is the possibility that it may evolve into an ideology of power. This possibility originates from the following: *firstly*, technology is a dominating force in all societies. *Secondly*, technology has contributed towards the creation of knowledge that is very often labelled as the “knowledge ideal” (see Van Rooy, 1996 and Stellingwerf, 2004). This originated from the remark by Francis Bacon that “knowledge is power”. In answer to this statement, Rossouw (1990: 54 - 65) says that technological knowledge is required to redirect the knowledge society. *Thirdly*, technological knowledge extends its range by taking on *characteristics* such as protection against an unliveable environment and security offered against a distorted world.

This appreciation of technology does'nt imply that there is no positive appreciation for technology: modern society and medicine would be unthinkable without technology and its contributions to the prosperity of the existing world order. Zhouying (2004) rightly distinguishes between hard and soft technologies. Hard technology is machine and product-centred and soft technology is human-centred. Both contribute to the well-being of a society through innovation and economic development.

Christianity, too, has a positive appreciation for technology. From a Christian perspective, technology should be valued as part of the creation and, in service of man, to cultivate creation. The following attitude towards technology in medicine, for instance, is imperative:

- The culture mandate presumes a principle of maturity. This means that culture, and therefore also medicine, must be developed and expanded. Undeveloped medical science is just as much of an evil as medical science that has become overdeveloped. A Christian ethos is an important guideline in meeting Biblical guidelines for technology. Technology should never be characterised as the only way in which value could be added to human life.
- Medical technology is no messiah or panacea. It cannot save man from his existential distress. Medical technology cannot change the world into a haven of rest and peace. Technology should be in the service of man and not *vice versa*. Man's association with technology should be a motive for his protest against the imperfection of our technologically degenerating world. Protest here means reforming and not revolutionary action. To avoid technology is no solution. In fact, nobody escapes the negative consequences of technology by avoiding it!

4.2 Post-modern influences

As mentioned above, post-modern philosophy advocates that there are no absolute truths and values (ethics) (see paragraph 1). Truths and values lie within oneself. Truths and values are formed by man's individual consciousness. Smit (2000: 146) rightly lays this development on the doorstep of "the macro-motive of individual liberty." He says that the dark side of individualism is that it is self-centred, egoistic and narcissistic. He refers to Charles Taylor who called individual liberty "a precious gift of civilisation and a central norm in modern culture". This liberalism teaches that man is free of any norm or idea, and it coincides with the view that man is no longer his brother's keeper. Each person must now take responsibility for him-/herself. The only bond the liberated person

recognises is his/her **own individualistic rational insight**. This liberalism also influences the way ethics are understood and implemented. De Villiers (2002: 41 - 43) gives a useful explanation of this view by contrasting a modern and a post-modern understanding of ethics. He says that in the **modern world** the contents of moral law is self-evident and can be known through reason, independently of Christian religious beliefs. The Christian religion provides only extra motivation for adhering to Christian principles.

The question that arises is how to react to this philosophy. Nobody objects to the fact that ethics are important but the problem is, *Whose ethics are important?* This situation is troubled due to the fact that an individual can choose a specific code of ethics, but it cannot be forced onto society. A specific ethic is seen as infringing on the individual's choice. The spirit of contemporary society is that "neutral" ethics should direct our actions. This implies that all worldviews should be accommodated within ethical decision-making. Although the logical inclination is that science should be based on positive facts (positivism) it cannot be denied that contemporary science philosophy has made it clear that science is always influenced by pre-suppositions. A positivistic view is therefore declined. Ricouer, Polanyi, Kuhn, Popper, Habermas, Chomsky, Thompson and others are all representatives of the debate on science philosophy. All of them argue from a specific premise in reality.

The role of presuppositions in ethics is well articulated by Koopman's (2004) article on the role of tradition in moral decision-making and moral consensus. He points out that in religious tradition, anthropology and nonreligious traditions contribute to moral decision-making.

The author therefore rejects a post-modern view on medical ethics. This rejection is based on the existence of presuppositions in science. This existence is argued by several scholars. Thompson (1987: 532, 534) writes that "To justify is to provide reasons, grounds, evidence, elucidation ... our interpretations are in principle accessible to, and justifiable for, the subjects whose discourse we are seeking to interpret." For Thompson science is always subjected to personal inputs and therefore presuppositions. Strauss (2002a; 2002b) holds a similar view. He argues that science cannot go without presuppositions. Even "objective knowledge" is not free from cultural, social and rational presuppositions.

It is for this reason that Mouton's (2001: 138 - 140) promotion of the role of meta-science is supported. He sees it as a continuous assessment of the scientific practice. Meta-science involves reflection on the nature of science, and in this sense science is a "self-correcting enterprise".

Decisions are subjected to quality checks in order to attain truthful and valid results (epistemic interest of science).

4.3 *The zeitgeist's contribution to a new medical ethic*

The table below describes more clearly the influence of technology and post-modernism on the shift in morality in medical ethics. Abortion, euthanasia and cloning will serve as examples:

New realities	New ethic	Example
New techniques, medicines and therapies	Should we do everything that we are able to do?	Cloning has the potential for a son to be his father's twin brother
The norm is the individual	No fixed values	From strict abortion laws to abortion on request
If it is not good enough, then replace it	Human life can be replaced /improved(substituted)	Euthanasia can bring an end to a life that seems not worthwhile in the subjective opinion of certain people

5. Case study: the integration of *zeitgeist* influences on medical ethics¹

5.1 *Background*

In the case study, "The Serpent was there", Badaracco (1998) describes an unhappy medical incident. Formaldehyde, which was in a bottle labelled "Lidocaine" was injected into a patient's eye during eye surgery. The patient, an elderly lady, immediately became blind.

This happened in a developing country where World Health Inc., a non-profitable American organisation, was providing modern treatment for surgical disorders suffered by inhabitants of developing countries.

The elderly woman was screaming with pain, believing that the "serpent was there". The serpent happened to be the devil.

The medical staff immediately travelled to the villa of the chief surgeon, a local person but one who had studied at an American medical school.

1 For an extensive discussion see Lategan (2002).

The issue at stake was that if the news of the event was made public, it could bring an end to the work of World Health Inc. More alarming was the fact that if the news was not communicated to the elderly woman, she would continue believing that this had been an act of the devil. The medical staff were confronted by the choice between keeping silent and continuing their work, which had and still would benefit many people, or telling the truth and running the risk of having their work discontinued. Surprisingly enough, nobody considered looking into the reason for the wrongly labelled bottle, or what they could do to address such situations.

5.2 The ethical dilemma

This case brings the question of the common good and the lesser evil into the spotlight. It looks into the utility of a decision and how it will affect the situation and the people who have made the decision.

The dilemma in this case is the question of whether continuing the medical treatment programme weighs more heavily than withholding the truth from the elderly woman. One can also rephrase this by asking whether the medical welfare of many people weighs more than withholding the truth from one person.

At first, the utilitarian decision would be to seek the common good. Quantitatively, the running of a programme is more important than informing one person of what happened. Yet, ethics are not mathematics and cannot be calculated to reach a precise answer.

It is a pity that the dilemma involved in not investigating the problem of the wrong labelling was in no way addressed. Surely this is a further issue which should be weighed against the continuing of the medical programme. Questions such as: *Has this happened before? How often has it happened? Who will attend to this problem?* should be raised and cannot be ignored in making a decision. Avoiding issues in making decisions is as troublesome as making the wrong decisions.

5.3 Addressing the dilemma

It is a well-known ethical fact/premise that in borderline situations (à la Karl Jaspers) one should seek the common good and avoid the lesser evil. This case is no different. What one should be aware of is: *What is the common good?* and *What is the lesser evil?* The common good from the point of view of the medical staff might not be the lesser evil in the case of the patient. Very often one will find in ethics that it is not difficult to arrive at a situation where one should be looking out for the common

good. Maybe this should be turned around: perhaps one should first start looking at what is evil in this situation. Technology is important to improve the quality of life. Occasionally the advantages of technology must be conveyed to a particular community. Technology cannot create the impression that it supersedes cultural orientations, or that its capabilities can replace human needs.

6. Application of a christian-informed medical ethic

6.1 *The Christian ethos in world views and ethical paradigms*

Van der Merwe (2002) argues that the way in which ethical decisions are implemented, are influenced by our world view and ethical paradigms. The following table illustrates the focus of the different world views on ethics:

World view/paradigm	Contents	Slogan	Problem
<i>Behaviourism</i> trained in how to behave	People are help myself	I couldn't reduced to cause and effect	Everything is
<i>Utilitarianism</i>	Morality is useful if it can bring about a desired result	The greatest happiness for the greatest number	Cannot know whether a decision is good or bad until the results are known
<i>Situation ethics</i>	The relevant norm arises from the situation and no universally valid laws are possible	All you need is love	All norms are relative to one absolute: love
Natural law ethics	"Natural" denotes the idea of "how things ought to be" while "law" refers to the consistency	Doing what comes naturally	Difficult to distinguish between human and natural behaviour

Divine command theory	in the way the world should work An authority-based theory	God said it, I believe it, that settles it	It denies individual behaviour, the role of reason and religious interpretation
<i>Virtue ethics</i>	The quality of one's character will influence the behaviour	Be good	An act is only good if you are good
<i>Kantian ethics</i>	Some things need to be done because it is the right thing to do	It is your duty	Duty for duty's sake
<i>Ethical egoism</i>	Do only those things that will be advantageous for yourself in the long run	Look out for number one	Over-emphasis on self-interest
Cultural relativism	Culture influences your ethical behaviour	When in Rome, do as the Romans do	Ignores the role of universally accepted norms

The following table serves as a Christian-informed ethical integration of these worldviews and paradigms.

World view/ paradigm	Problem	Christian-informed medical ethics
<i>Behaviourism</i>	Everything is reduced	Cause and effect

	to cause and effect.	cannot be regarded as the only “outcome” of a situation. Calculate the effect of any decision taken. Does it respect the holiness of life? Is the decision an improvement of the current situation? Reductionism is not valued in ethics.
<i>Utilitarianism</i>	Cannot know whether a decision is good or bad until the results are known.	The outcome of a decision cannot jeopardise the Biblical guidelines for a decision. Man cannot simply take action and then “wait and see” what will happen.
<i>Situation ethics</i>	All norms are relative to one absolute: love.	In Christian ethics all norms are important. The “love” in situation ethics should not be confused with the central religious love commandment.
Natural law ethics	Difficult to distinguish between human and natural behaviour.	For the Christian scientist all behaviour is subject to Christian values. Christian values direct all actions.
Divine command theory	It denies individual behaviour, the role of reason and	The role of presuppositions emphasises the

<p><i>Virtue ethics</i></p>	<p>religious interpretation</p> <p>An act is only good if you are good</p>	<p>important role of worldview, religion and culture and the importance thereof cannot be ignored. No person is a guarantee for good or bad values but the moral conviction of the person directs the intention of the decision.</p>
<p><i>Kantian ethics</i></p>	<p>Duty for duty's sake</p>	<p>Moral behaviour is not subject to duty but to a person's moral conviction.</p>
<p><i>Ethical egoism</i></p>	<p>Over-emphasis of self-interest</p>	<p>Ethical behaviour cannot boost the individual only – one's neighbour and the situation are also important. Ethics cannot benefit one person only.</p>
<p>Cultural relativism</p>	<p>Ignores the role of universally accepted norms</p>	<p>Internationally accepted norms such as the holiness of life and integrity protection cannot be ignored.</p>

7. Guidelines

In dealing with conflict situations the following guidelines can be set:

- Review the situation to determine the actual problem.
- Identify ethical issues in the situation and gather data.
- Identify personal and professional values.
- Identify the world view influencing the value system.
- Respect the diversity of cultures, religion, values and beliefs.

- Identify any existing value conflicts.
- Identify the range of actions and anticipated outcomes.
- Are alternative actions and decisions possible?
- Decide on a course of action and carry it out.
- Evaluate the results.

8. Summary

This article has argued the point that medical ethics is influenced by two powerful *zeitgeists*: technology (the ability to manipulate things) and post-modernism (man has become his own absolute truth). This has resulted in the view that man can be replaced if his life is not valued as meaningful. Christian ethics objects to the ideological distortions of these *zeitgeists*. This is based on the Christian ethos which holds the view that human life is holy and cannot be compromised to fit into an ethical framework influenced by a particular *zeitgeist*.

Bibliography

- BADARACCO, J.L. 1998. *Business ethics: Roles and responsibilities*. St. Louis: McGraw-Hill.
- CRANE, A. & MATTEN, D. 2004. *Business ethics*. New York: Oxford University Press.
- DE VILLIERS, E. 2002. Euthanasia and assisted suicide: a Christian ethical perspective. *Acta Theologica. Supplementum*. 3: 35 - 47.
- DE VRIES, M.J. 1997. Educating young Christians for serving the Lord in a technological world. In: Van der Walt, B.J. & Swanepoel, R. (Eds.) *Signposts of God's liberating kingdom: Perspectives for the 21 century*. Vol. 1. Potchefstroom: IRS.
- DOUMA, J. 1983. *Verantwoord Handelen*. Kampen: Uitgeverij Van den Berg.
- DU RAAN, C.J. & LOUW, D.J. 1997. Skepsel as mede(her)skepper ? Pastoraat binne die konteks van hedendaagse geentegnologie. *Nederduitse GereformeerdeTeologiese Tydskrif*. xxxviii (3 & 4): 115 - 125.
- DU TOIT, B. 2000. *God: Geloof in 'n postmoderne tyd*. Bloemfontein: CLF
- GOOSEN, M. & LOUW, D.J. 2000. Teologie en die publieke bio-etiese diskoers oor aborsie. *Nederduitse Gereformeerde Teologiese Tydskrif*. xxxxi (3 & 4): 260 - 276.
- GRACE, D. & COHEN, S. 1996. *Business ethics: Australian problems and cases*. Melbourne: Oxford University Press.
- HEYNS, J.A. 1972. *Lewende Christendom: 'n Teologie van gehoorsaamheid*. Kaapstad: Tafelberg.
- KOOPMAN, N. 2004. The role of tradition in moral decision-making and moral consensus. *Nederduitse Gereformeerde Teologiese Tydskrif*. xxxv (3 & 4): 838 - 848.
- KOOPMAN, N. & VOSLOO, R. 2002. *Die ligtheid van die lig: Morele oriëntasie in 'n postmoderne tyd*. Wellington: Lux Verbi.
- LATEGAN, L.O.K. 1999. Etiese vrae oor en perspektiewe op die mediese beëindiging van die lewe. *Hervormde Teologiese Studies*. 55 (4): 1130 - 1150.

- LATEGAN, L.O.K. 2002. Teaching business ethics: How effective are case studies? In: L.O.K. Lategan & P. le Roux (Eds.). *Business Ethics*. Bloemfontein: Tekskor. 102 - 120.
- MEDICAL RESEARCH COUNCIL OF SOUTH AFRICA 2001. Ethics & Human Rights. Available at: http://www.mrc.ac.za/ethics/ethics_human.htm
- MOUTON, J. 2001. *How to succeed in your Master's and Doctoral Studies*: Pretoria: Van Schaik.
- ROSSOUW, H.W. 1990. Wetenskapsbeoefening as kultuuraktiwiteit. *Tydskrif vir Geesteswetenskappe*. 30 (1): 54 - 65.
- SCHURMAN, E. 1977. *Reflections on the technological society*. Ontario: The Wedge Publishing Foundation.
- SCHURMAN, E. 1985. *Tussen technische overmacht en menselijke onmacht - verantwoordelijkheid in een technische maatschappij*. Kampen: Kok.
- SCHURMAN, E. 1997. Perspectives on technology and culture. Potchefstroom: IRS.
- SMIT, D.J. 2004. Lex orandi, lex credendi, lex (con)vivendi. *Nederduitse Gereformeerde Teologiese Tydskrif*. xxxv (3 & 4): 887 - 907.
- SMIT, J.H.
1985. *Etos en etiek*. Bloemfontein: Patmos.
- SMIT, J.H. 2000. Ethics and the technological university. In: Lategan, L.O.K. (Ed.) *The making of a university of technology*. Bloemfontein: Technikon Free State Studies in Higher Education. 144 - 152.
- STELLINGWERF, J. 2004. Herbezinning op de filosofie van de techniek. *Philosophia Reformata*. 69: 77 - 92.
- STRAUSS, D.F.M. 2002a. Is it possible to do theology without philosophical presuppositions? *Acta Theologica*. 22(1): 146 - 164.
- STRAUSS, D.F.M. 2002b. Voorvrae rondom die geloofwaardigheid van die Bybel in 'n "post-moderne tyd." *Nederduitse Gereformeerde Teologiese Tydskrif*. 43(3 & 4): 570 - 592.
- STRIJBOS, S. (Red.). 1985. *Nieuwe mediese etiek*. Amsterdam: Buijten & Schipperheijn.
- THOMPSON, J.B. 1987. Language and ideology: A framework for analysis. *The Sociological Review*. 35(3): 516 - 536.
- UYS, L. & SMIT, J.H. 1985. *Kliniese Etiek*. Kenwyn: Juta.
- VAN DEN BERG, J.H. 1969. *Mediese macht & mediese etiek*. Nijkerk: Callenbach.
- VAN DER MERWE, J.C. 2002. Making ethics work. In: Lategan, L.O.K. & Le Roux, P. (Eds.) *Business Ethics*. Bloemfontein: Tekskor. 16 - 23.
- VAN DER WALT, J. (Red.) 2003. *Die Bybel A-Z*. Vereniging: Christelike Uitgewers Maatskappy.
- VAN ROOY, H.F. 1996. Die sogenaamde Bybelse kultuurmandaat (Gen. 1: 28 en 2: 15) en ontwikkeling: 'n Ou-Testamentiese perspektief. *Koers*. 61 (4): 425 - 440.
- VELEMA, W. H. 1990. *Orientatie in de Christelijke etiek*. Den Haag: Boekencentrum.
- VELEMA, W.H. 1996. *Door het Woord bewogen*. Leiden: Uitgeverij JJ Groen & Zoon.
- VOSLOO, R. 2004. Anderkant etiek? Tradisie, dekonstruksie en verdere weë. *Nederduitse Gereformeerde Teologiese Tydskrif*. xxxv (3 & 4): 936 - 955.

VOS, C.J. 1982. Calvin's view of man in the light of Gen. 2: 15 or Man: Earth's servant of the Lord. *Calvinus Reformator*. Potchefstroom: IRS. 131 - 141.

ZHOUYING, J. 2004. Technological progress in history: a survey of evolution and shift of research emphasis from 'hard-tech' to 'soft-tech' development. *International Journal of Technology Management and Sustainable Development*. 3(2): 133 - 148.

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