
Reconciling science and faith: dialogues with Anton Van Niekerk

Michael F. Heyns
School of Philosophy
North-West University
POTCHEFSTROOM
Michael.Heyns@nwu.ac.za

Renato Coletto
School of Philosophy
North-West University
POTCHEFSTROOM
Renato.Coletto@nwu.ac.za

Abstract

In this article the views of the South African philosopher Anton van Niekerk on the relationship between (Christian) faith and science are explored from a reformational point of view. First we pay attention to the specific characteristics and roles that Van Niekerk attributes to faith and science, then we pay attention to the way he relates the two. In a last phase we try to identify the “paradigm” behind Van Niekerk’s standpoints and to provide some critiques and alternatives from a reformational point of view.

Opsomming

Versoening tussen geloof en wetenskap: dialoë met Anton van Niekerk

In hierdie artikel word die standpunte van die Suid-Afrikaanse filosoof Anton van Niekerk oor die verhouding tussen (Christelike) geloof en wetenskap vanuit 'n reformatoriese perspektief verken. Ons gee eerstens aandag aan die spesifieke kenmerke en rolle wat Van Niekerk aan geloof en wetenskap toeken, dan gee ons aandag aan die manier waarop hy die twee met mekaar in verband bring. In 'n laaste fase probeer ons om die "paradigma" agter Van Niekerk se standpunte te identifiseer en om enkele punte van kritiek en alternatiewe vanuit 'n reformatoriese perspektief te voorsien.

1. Introduction

The questions of this essay are not new in South Africa¹: How are science and faith related? Is faith a sort of knowledge? Is it rational? Is it possible that science and scholarship can be decisively influenced by a Christian perspective? Secularists easily assume that speaking of a Christian perspective in scientific theorising is more or less nonsensical; a contradiction in terms. Christians and other non-secularist scholars try to escape this conclusion. In line with the latter intention, in this article we would like to examine the views of the South African philosopher Anton Van Niekerk from Stellenbosch University (in dialogue with a few others). He remarks (2005:173-174, 180; 2006:33-35, 37-38, 40) that we face an aggressive and growing belief that there can be "no reconciliation" between science and faith. He refers to the claims of Richard Dawkins and Daniel Dennett, to their attempts to establish the theory of evolution as the most important idea of modern science and to prove that it cannot be reconciled with faith. This rejection of reconciliation is also the hallmark of the "fundamentalism" and "biblicism" of the creationists, who enact "a return to Tertullian". Van Niekerk (2005:173; 2006:33) on the other hand, seems to champion an "attempt of reconciling" faith and science – which he further formulates as an attempt to "let science and faith move closer to each other".

Although we agree with Van Niekerk that these onesided and radical (secular as well as Christian) arguments are not satisfactory, we are going to argue

1 Duvenage (2015:15) remarks that since the mid 1800's the issue of faith and science has remained one of the "key issues" at least in Afrikaans-speaking intellectual circles.

that his reconciliation-project does not provide an adequate alternative and is rooted in the same basic “paradigm” adopted by most of his interlocutors. Our arguments will utilise a transcendental viewpoint and strategy (i.e. identifying ontological conditions behind the ostensible).² We shall particularly proceed from the assumption that faith and religion are among the conditions that enable or make possible our knowledge of the world. The main purpose of this article is to introduce and analyse Van Niekerk’s position and to propose a few critiques and possible alternatives from a reformational point of view.

2. A map of the positions

In the course of time Van Niekerk interacted with several authors on the relationship between faith and science. In this section we will try to sketch a map of the different positions *from Van Niekerk’s point of view*, to start understanding his own standpoint. We will briefly deal with secular and Christian fundamentalism, liberal scientism, postmodern relativism and the reformational movement for Christian scholarship.

Van Niekerk (2005:170-171,180) characterises the viewpoint of secularists like Dawkins and Dennet as being opposite (but in a sense also similar) to the first known Christian viewpoint concerning the relationship between faith and reason. Already in the third century Tertullian declared philosophical knowledge to be superfluous and dangerous. What people need to know, God has revealed to us in the Scriptures. This is still the position of contemporary fundamentalist creationists. Van Niekerk interprets their account as meaning that faith and science are incompatible, and that belief is the superior and sufficient knowledge. This position is the opposite of but maintains the same underlying fundamentalism as Dawkin’s secularist position, stating that all we can and need to know about the world is what science teaches us. Religion is unreliable and dangerous because it is not based on experience or reason.

Secularist fundamentalism is also more or less the position of another voice from Stellenbosch, George Claassen, a science journalist who held conversations with Van Niekerk. In an attack against the influence of postmodernism Claassen (2007:235-236) declares that postmodernism fuels a growing confusion between the natural sciences and the humanities. Postmodernist scholars in the humanities, he says, try to promote the notion that all explanations are mere stories and myths based on nothing more

2 Cf. Grayling (1992:506) for a description of transcendental thinking.

than the cultural assumptions of the storyteller. According to Claassen this has the unacceptable implication that Einstein's theory of relativity, Newton's theory of gravity or Darwin's theory of evolution are mere culturally coloured narratives and not objective accounts of the laws of nature.

This concern affects another biblical scholar in discussion with Van Niekerk, namely I.J.J. Spangenberg who argues that postmodernism risks causing rampant subjectivism (2007:189). Spangenberg's position, however, is not secular fundamentalism; we should rather speak of Christian liberalism or scientism. Science should not eliminate but regulate and shape faith. Later on, we will have more than one opportunity to listen to Spangenberg's objections to Van Niekerk's arguments.

Claassen (2007:245-246) confirms his aversion for the subjective when positing a clear-cut distinction between science and philosophy. The latter, as he sees it, "does not really understand" science. Even closer to the core of his position is Claassen's (2007:246.250) scepticism about metaphysics or supernatural explanations. In this regard Claassen (2007: 243) quotes Anton van Niekerk:

In South Africa we have decades ago noted the relatively unpleasant debates about claims of a so-called 'Christian science' and the justification of the latter from the 'Philosophy of the Cosmonomic Idea', as developed in the thinking of Herman Dooyeweerd and HG Stoker. But it is completely unjustified, on the basis of such peripheral phenomena, to give the impression that not only science and theology, but also science and philosophy are in constant tension with one another.

Apparently, Van Niekerk assumes that Dooyeweerd and Stoker adopt a position similar to the one of Tertullian and fundamentalist creationists. This would mean that those who support the idea of Christian science and scholarship in the format of the Philosophy of the Cosmonomic Idea (also known as reformational philosophy) assume an insoluble tension between secular science and Christianity. To give a little extra weight to his argument, he labels the position of Dooyeweerd and Stoker as "peripheral".

Van Niekerk's refusal to admit that science and faith exist in "constant tension" marks his distance from all fundamentalist positions. In fact (as we already mentioned) he would like to posit the possibility of *reconciliation*. It seems that he has in mind a sort of concordance or complementarity as the guiding principle for his project. In order to establish such project Van Niekerk tries to determine the specific characteristics of both faith and science. In this process, a few principles or guidelines are identified; we will pay attention to them in the next section.

3. Faith and science: different questions, different answers

Van Niekerk (2005:181-182; 2006:41) argues (and we agree) that science has no monopoly on reliable knowledge. It is especially the so-called questions about meaning that science is not able to answer, for example questions about where we come from, what is our destiny, what is the meaning of life. These questions are, however, a fundamental part of our being human, and we try to answer them through the faith-dimension of our existence. The first principle is therefore that faith and science ask and answer different types of questions.

Van Niekerk makes the following claim: "Faith knowledge and scientific knowledge are two equally legitimate forms of knowledge that we should not confuse with or reduce to each other". He argues that we are dealing here with two knowledge claims that differ logically because they function in two different ways in the lives of people (2005:184; 2006:44). This first principle is fundamental in Van Niekerk's way of thinking and depends on a distinction he made at a much earlier stage between two types of rationality. Van Niekerk (1982:152) agrees (to some extent) with critical rationalists like Popper, Hans Albert and William Warren Bartley III that scientific theories use a narrower notion of rationality or method hallmarked by critical testing. In distinction from the latter, Van Niekerk (1982:154-155) also acknowledges a broadened ("verruimde") concept of rationality which is used by hermeneutic philosophy as "the truthful indication of the meaning of reality in the dialogue between human beings". He also formulates the latter type of rationality as follows: "our rational knowledge of reality assumes a meeting between the human being and reality that results in reality attaining meaning for a human being".

Many Christians will probably agree to a large extent with a second guideline that Van Niekerk (2007:682; see also 2005:182-183; 2006:41-43) outlines as follows: The Bible is no scientific textbook but God's introduction to Himself through which His message of salvation for the world is announced. Furthermore: In the Christian faith and theology we find meaning-giving statements that cannot be regarded as scientific hypotheses that are empirically testable. Statements of faith are not simply provisional hypotheses that religious people adhere to until the scientific findings will refute them one day.

Van Niekerk (2005:183; 2006:42) mentions some of these meaning-giving beliefs: In the account of creation (Genesis 1-3) for instance, we find the

message *that* God created everything. We cannot, however, expect this account to give us scientific explanations about the origin of our world. Another crucially important belief is that God has revealed himself in the person of Jesus of Nazareth, as well as the belief about a relationship of love between God and man. The belief that this relationship is endangered because of human disobedience is equally fundamental. Furthermore: We are God's representatives in the world and we complete His works of creation with our responsible cultural achievements.

Most believers will agree with the notion that the Bible is no scientific handbook. However, it is important to take note that Van Niekerk (2006:43) also distances himself very thoroughly from the doctrine of the factual correctness of the Bible by adding that the "knowledge of God" that we get in the Bible, is not based on the "historical reliability of biblical narratives" or on "intellectual agreement with the factual correctness of historical information". It is rather the case that believers, who receive this knowledge from the Bible, "open up" themselves "to the claim that God makes on them through the work of the Holy Spirit". Knowledge in the Bible is therefore "existential knowledge that does not function primarily cognitively or intellectually in our lives, but rather functionally and by creating an identity".

In his debate with Spangenberg, Van Niekerk (2007:681) repeats and articulates the latter idea. He argues that if one makes faith dependent on the historical reliability of the Bible, then one may even stop believing. However, he assures us, "in faith and in theology (...) what counts is not in the first place historical accuracy". Spangenberg's positivism (like Christian fundamentalism) tries to let "the credibility of belief depend completely on the historical reliability of the text". But the Bible contains a "kerygmatic history", whose purpose is not to let us know "exactly what happened in world history, but what happened in the history of God's acts of salvation". Van Niekerk (2007:682) admits that "historical reliability" is "not necessarily a trivial ideal". But he insists that theology and faith are busy with "the quest for meaning" not with "the desire for historical correctness".

4. Preliminary perplexities

What is striking in these explanations about the nature of the relationship between science and faith is that Van Niekerk highlights especially the differences between the two. He seldom indicates how they should move closer together (as he does assume) or whether there is some chance that the one may significantly influence the other.

In fact, in his initial engagement with the topic, Van Niekerk (1982:150) specifies that his question is only whether faith-knowledge is as rational as empirical-scientific knowledge. He (1982:165) acknowledges that his distinction between science and faith does not give a satisfying answer to the important question of the relevance of the Christian faith for scientific activities. He adds that it is for him “as a convinced Calvinist undoubtedly the case that the Christian faith is relevant for science” although he does not want to expand on this topic because he does “not understand it as clearly as he would like”. In his later dealings with the topic, his emphasis is still on the difference in rationality between science and faith. The *connection* between the two remains mostly sketched; something that needs to be deduced from his assessments of the differences between them.

Is faith relevant for science? In respect of the assumption that God created, Van Niekerk (2005:192-193) seems to suggest that this belief can fulfill the role of a kind of transcendental “control belief” (a notion introduced by Wolterstorff, 1976:63 ff.). Such recognition could mean, in our interpretation, that this belief has something directional to say for science. It could suggest, for example, that Christians cannot agree with theories that posit “matter” or rationality as the independent “creators” or ultimate “origins” of other spheres of life. Sometimes Van Niekerk (1982:164; 2005:191; 2006:51) seems on the verge of issuing a warning about evolutionism; but then again he declares that belief in creation is something purely personal that does not belong in science. On this point, one should ask the question whether his conviction – that belief-knowledge and scientific knowledge are very different from one another – should not be re-phrased in a softer way to make room for their interaction.

The same kind of question should be asked about Van Niekerk’s apparent denial of the “factual correctness” of Genesis 1-3. We can agree that it is too much to ask from the Bible to give an account of creation according to the conventions and results of modern science. But then, the claim in Genesis 1-3 that God created everything is a claim that believers also accept cognitively and intellectually. The way in which belief and science are distinguished by Van Niekerk, makes us ask whether he is able to go beyond a harmonious but disengaged relationship between the two.

Although Van Niekerk’s proposals may sound reasonable in many contemporary theological circles, we cannot help expressing the concern that they may encourage disengagement from those Christian beliefs that may sound unacceptable to the modern mind. Such disengagement might concern beliefs that are very close to the core of the Christian faith (like the

virgin birth or eternal punishment) – and perhaps even beliefs that belong to the very core of Christianity (original sin, Christ's rise from death and His deity).

A distinction between faith and science (Van Niekerk, 2005:184; 2006:44) as modes of knowledge is certainly acceptable. The question, however, is what this distinction positively implies for the *relationship* between the two modes of knowledge. Van Niekerk seems not to get beyond the inference that the stark differences between them imply that they cannot connect or interact in any significant way and the attempt to make them influence one another is futile.

This seems to be the implication, for example, when he (2005:185; 2006:44) argues that science always looks at a limited modality of the concrete, experiential reality. Faith confessions on the other hand focus not only on one specific modality but “give mostly interpretations of the meaning of the totality of the experiential reality” in order for us to get answers to our questions of meaning. Once again our question: Why stating only the difference and not also the obvious interaction? After all, no science will be able to make sense of its limited focus if it does not have a broader picture of where this modality fits into the broader totality. The fact that a limited focus can be distinguished from the broader perspective does not mean that the narrower focus is not significantly influenced by the broader perspective.

5. Faith and science: the role of certainty

The younger Van Niekerk states that he (1982:163-164) is not enthusiastic about the concept “Christian science” because this notion is in danger of reducing scientific knowledge to religious convictions. A too narrow coupling of faith certainties and scientific theories will simply lead to superstition. Similarly, science can never have the certainty of faith. If it tries to have this kind of certainty and thus tries to constitute meaning, it will abandon its scientific identity and lead to ideology.

A rather strong difference between faith and science (Van Niekerk, 1982:152-153, 162-163; 2005:185-187; 2006:44-45) thus concerns the role that “certainty” plays in each one of them. Certainty is in science an ideal that should always and without a second thought be dropped. Scientific theories should always have the logical status of provisional hypotheses; they are valid only until they are falsified. In faith claims, by contrast, certainty plays a crucial role. Faith is directed towards “certainties” that one cannot abandon

without putting one's basic identity at stake. In other words, the knowledge of faith is characterised by a commitment to what is confessed and involves the whole person. The certainties of belief can therefore not be changed at will without endangering one's (directional) identity. Certainty should *not*, however, play this kind of role in science. If it does, one should look with scepticism at a science that is not open to refutation, and is therefore close to ideology (cf. Popper, 1963:37-39).

Once again we think that Van Niekerk should state this difference more cautiously, as here he might reveal a contradiction in his own thinking. In fact, in the title and at the beginning of his book *Geloof sonder sekerhede*, he (2005:24) doubts that one may speak with too much certainty about God; but then he claims that faith is characterised by certainty. He (1982:163; 2005:186; 2006:45-46) later on softens this looming contradiction and states that certainty "sometimes" plays a role in faith. In science on the other hand, it never plays a role, he insists. It is, however, questionable whether most scientists and scholars would constantly put themselves in a situation that Kuhn (e.g. 1996:66 ff.; 92ff.) would regard as a phase of scientific "crisis" or "revolution".³ Most scientists and scholars proceed in their fields of study with assumptions that they very seldom question or abandon. To use Van Niekerk's own moderating tactic, one could say that *sometimes* certainty (or a "belief" about the basic tenets of one's tradition) does play an important role in science. If this is true, it might suggest also that there is more interaction between faith (e.g. paradigm assumptions) and the analytical activities of scientists than Van Niekerk acknowledges.

Van Niekerk thinks that the difference in certainty reflects a distinction between the "whole person" and being a "scientist". He seems to suggest that the whole person is involved in affairs of belief but in science it is only the empirical and logical abilities of the subject that are involved. However, is it not important to acknowledge also the presence of the whole person behind scientific activities? Is it not the whole person that proceeds in a certain direction and therefore gives a certain direction to science? Van Niekerk gives the impression of disengaging the scientist from the whole person.

3 On this issue we find Toulmin's arguments in "Cosmopolis" (1992:175 ff.) quite illuminating. Rorty too (1991:85-86) rejects the idea of science in permanent revolution. The latter idea was supported on the contrary by Lyotard (1984:60).

6. Faith and science: subjective and objective

From his point of view, Spangenberg (2007:197-198) describes religion simply as “people’s interpretation of themselves and their world”. His claim is that it is important to recognise that “no one knows God/the divine objectively”. Faith is about “subjective experiences that they interpret”. If that is so, new interpretations are inevitably produced and tradition need not be maintained. It can also be added that the Christian religion is just one among many “symbol systems” or religions. With this Spangenberg adopts the traditional positivist view of the subjective: He places religion also entirely within the category of the subjective and the relative. This is something that will necessarily result in a form of religious relativism.

Van Niekerk (2005:188-189; 2006:47-48) tries to escape the latter conclusion with an explanation of the concepts objective and subjective. Scientific truth can be labelled “objective” because it is the kind of truth that claims to be valid everywhere and for everyone with the applicable “background knowledge”.⁴ This universalistic description of “objective” implies therefore that truth is not influenced by the person who makes the claim or relativised by the circumstances in which the claim is made.

It can be positively said that Van Niekerk avoids describing objective as merely “factual” and subjective as merely personal “opinion or self-creation”. On the other hand, it seems naive to imagine that scientists would readily drop (even part of) their scientific paradigm simply because so-called evidence points in another direction (cf. Kuhn, 1963; Feyerabend, 1970:203 ff.). In other words, we are not convinced that the objectivity of science means that there is so little influence of the subject (whole person) on her scientific activities.

Neither does Van Niekerk really seem convinced of a sharp distinction between subject and object. We also encounter in his views a clear sensitivity for the transcendental side of the practice of science, a side which also includes more of the subject (whole person) than a sharp distinction would allow. To confirm our impression we can again look at his debate with Spangenberg.

In his critical discussion of Van Niekerk’s theological views, Spangenberg (2007:199) states that Van Niekerk does not take into account the latest research on the historical Jesus. Spangenberg (2007:192) notes that Van

4 Van Niekerk’s remark on background knowledge seems quite significant and it could lead him on a different course of argument, especially if connected to his ideas about pre-understanding, meaning and so forth (more about it below). From our point of view we could add that one’s worldview and the religious orientation that it includes, is indeed a very important and unavoidable part of one’s background knowledge.

Niekerk throughout supports the tradition of the Church that Jesus is God who became visible as a person. Van Niekerk, according to Spangenberg, should take note of the scientific research pointing out that neither Jesus himself nor the first-generation Christians held this belief, which emerged only about sixty years after Christ's death.⁵

Spangenberg insists that this tradition is constituted by the human subject and is subjective. According to him (2007:195-196) tradition is nothing but the interpretations of the Bible by previous generations. The knowledge framework and worldview of contemporary people differs from the one of earlier interpreters, and of the Bible itself. There is thus a plurality of Bible interpretations. True, "the master narrative of Western Christianity" and the Bible itself as an interpretation take a prominent role. But, he says, we should always keep in mind that this master narrative is nothing but a "human construction". This means that the Bible does not say much in itself. "It is a dumb document. We need to read and interpret it to make it say something". Spangenberg therefore suggests that Bible interpretation by Christians (especially exegetes like ministers of faith and theology professors) is a highly subjective process. To counter this, the historical-critical method of exegesis was developed, to give "a bit more objectivity" to the interpretation of the Bible so that we do not "fall into utter subjectivity".

Van Niekerk (2007:679) rightly criticises Spangenberg's effort to free himself from tradition, as if a Bible scholar could be simply busy with a supposed "unbiased view of scientific facts" or with some a-historical "view from nowhere". He (2007:679) points out that Spangenberg almost exclusively works from the "tradition of historical criticism of the biblical text". Van Niekerk (2007:680-681) regards the latter as a "naive, over-simplified concept of 'science'", it is clearly the product of a "fairly positivist mode". But positivism, as a philosophy of science, is nowadays quite discredited and it seems clear that science is much more complex than the positivists imagined. Van Niekerk (2007:679) also underlines that positivism, exemplified in the historical-critical exegetical method, "is anything but 'neutral'". Positivism and historical criticism "colour" the so-called "irrefutable facts (...)" just as much as the tradition of doing Christian theology".

Van Niekerk (2007:682) points out that his view of theology "is not too far removed from a series of growing insights about the nature of science". With

5 According to Spangenberg (2007:193-194) research demonstrates that the Christian tradition relies on the Latin translations of the Bible and not really on the Hebrew and Greek texts, and it makes use of an interpretation that does not respect the context of quotations from the Bible.

this remark he would especially like to underline that there is a “subjective side to science”. By using the term “subjective” he implies that “science is not merely the neutral registration of experienced phenomena that simply, without subjective mediation, ‘speak for themselves’”. He admits that “science is also a construction of the creative human imagination which builds phenomena and relationships between phenomena as much as we register these phenomena with our senses”. He therefore concludes:

The subject is an essential and undeniable part of the development of scientific knowledge. In this respect science and theology, with due acknowledgement of all the important differences we can recognise between the two enterprises, are also not that different from each other (Van Niekerk, 2007:683).

By referring to Heidegger and Gadamer, Van Niekerk (2007:678-679) goes even as far as arguing that texts such as the Bible should be read “on the basis of a contemporary pre-understanding”. Such a pre-understanding “co-determines” then what one finds in a text. This implies, explains Van Niekerk further, that concepts such as “pre-judgment”, “authority” and “tradition” should get more positive connotations than those they have received in modernity. This more positive connotation presupposes a particular insight into the interpretation of texts:

We understand, after all, nothing if we do not understand it as something we are already familiar with. (...) We must inevitably attribute an ‘authoritative’ claim to the truth that it wants to utter, before we can interpret it further (...). The interpretation of texts is not done in isolation. It is always the outcome of a tradition process (...). The tradition (...) provides an indispensable pair of glasses (Van Niekerk, 2007:678).

With this Van Niekerk counters the sharpness of the traditional distinction between the subjective and objective sides of the scientific enterprise. Moreover, by acknowledging the transcendental Heideggerian notion of pre-understanding (Heidegger, 1963:193 ff.) he gets in the vicinity of the Augustinian notion of faith as pre-condition for rationality. According to Taylor (1980:28) pre-understanding is knowledge we have before any formulation of how we deal with things – with the important feature, Taylor (1993:325-326) says, of making sense of our conceptualizations because it provides a “background sense of reality”.

At this juncture a reader might start feeling that Van Niekerk is ready to extend his views concerning the interpretation of the Bible to all of science and then also to use them in his attempt to let science and faith move closer together. Nevertheless, owing to the differences between science and faith, as well as the distinction between the whole person and the scientist (that

we already pointed out), Van Niekerk (2005:190; 2006:50) emphatically returns to his conclusion that science and faith “seldom talk about the same kind of reality”. They simply “make different kinds of knowledge claims” and “express different kinds of truths”.

The strategy of postulating two “kinds of knowledge claims”, two “kinds of truth”, and indeed two “kinds of reality” (Van Niekerk 2006:50) that differ to such a large extent, may imply that Van Niekerk kindles a dualism⁶ between faith and science in which the distinction between the two is at risk of becoming a division.

7. Faith and science: (how) are they related?

In the previous section we have started moving beyond Van Niekerk’s assessment of the specific characteristics of faith and science and we have started looking at the way he relates them. We have noticed that Van Niekerk’s basic position could be designated by a few tentative key-words: Independence, complementarity, parallelism, concordance between faith and science. Yet in some cases he seems to posit several kinds of interaction between the two and it is in this sense that one might speak of some “oscillations” in Van Niekerk’s approach.

Let us start by understanding his “standard” position. Faith and science, as we have seen, ask and answer different questions, have their specific natures and roles and should not transgress their boundaries. A harmony between the two may thus be achieved and the possibility of conflict may be avoided.

Considering Dawkins’ remark that “design does not precede evolution, but is rather the product of evolution”, Van Niekerk (2005:192-193; 2006:52-53) asks whether the “confession that God is Creator with this gets the death blow”. He answers that this is not the case, because faith is not dependent on “the argument from design” and that “God could create through natural selection”. If one confesses that God created everything, one does not compete with the biologists but tries to “interpret” the “meaning of everything that we know of – also on the terrain of science”. This is to use “a wider context” than merely the narrow analytical approach, in an attempt to determine “the

6 According to Mautner (2000:152) a theory (paradigm or system of thought) can be called dualist if it “has at its basis two radically distinct concepts or principles”. Examples are the metaphysical theory that two kinds of reality exist namely finity and infinity, matter and form, matter and spirit, as well as the view of the human being that humans consist of two “radically distinct constituents” namely body and mind or soul.

value, importance and relevance of separate phenomena”. From the faith perspective one can see nature as something with an origin, destiny and meaning beyond science itself and thus in God. In this interpretation nature is seen as “something with a meaning outside itself (...) as something that (...) indicates an origin and destination”. Yet we should resist the temptation of transporting these insights into the sphere of science.

The same holds for science: It should not transgress its boundaries. Van Niekerk (2005:193) argues that any scientist is free to question, for instance, beliefs about creation, “in his or her personal capacity”. It can, however, not be done “in the name of science itself”. Otherwise “you have ceased to do science and begin to confess a kind of faith – even if it is simply the belief that we can know or say nothing more than science allows us”. Van Niekerk emphasises that we should resist the claim that “this confession indisputably ensues from and is undergirded by the results of science”. This is science that “degenerates into ideology”. He (2005:191-192; 2006:51-52) explains that this ideologisation happens when science does not see its claims as provisional and falsifiable but as fixed, unchangeable certainties. This, says Van Niekerk, is for instance what happens when Dawkins declares with “intoxicating certainty” that the theory of evolution is “absolutely incontestable” and that it proves “that there is no creator God”. With this attitude, says Van Niekerk, the theory of evolution starts to answer questions about meaning that science cannot answer.

One might conclude that in Van Niekerk’s approach faith and science are like two closed compartments or two parallel lines. In geometry two lines are parallel when, even if extended ad infinity, “they never touch at any point”. Yet Van Niekerk would most probably reject the objection that he does not let faith and science “touch”. He says for instance that it is

... intolerable that many scientists who are still serious about their faith (...) increasingly seem to suffer from a kind of intellectual schizophrenia: On Sundays (...) they confess their faith, but from Monday to Saturday, they live in and work with a reality that (...) in terms of concepts and laws (...) is seemingly light years away (Van Niekerk, 2005:168).

It is significant that Van Niekerk sees this attitude as an untenable dualism. He notes indeed that this “tension cannot continue indefinitely; somewhere one of the two persons gets the upperhand, and this is rarely the one most loyal to the church”. Here he gives the impression that science and faith should indeed interact.

Such impression is strengthened when he (Van Niekerk, 2005:171,173) proposes what he calls an “interim consensus”: The attempt by believers

and the church to let “science and belief move closer together”. However, this consensus also implies (2005:171-172) that the “scientification of our culture” must necessarily lead to a “revision of earlier views which were accepted uncritically in church circles”. The Bible writers wrote with an old and unscientific worldview in mind. This means, for example, that demon possession will today rather be seen as a psychological disturbance. According to Van Niekerk “the acceptance of these insights for most religious people today no longer implies that their religion is directly in danger because of that”.

Here we have another instance in which pure parallelism seems suspended and faith and science seem to interact and “touch”. Yet do we have interaction or an intrusion of modern science in the field of faith? Does not science then acquire a sort of “magisterial” role in determining the content of “modern” faith? The French theologian Henri Blocher (1984:15 ff.) although adopting a position similar to Van Niekerk’s, would not accept such an authoritarian role for science. From the perspective of his “interactive view” of faith and science, Wolterstorff (1989:72 ff.) might surely add the following question. If science is in some cases supposed to influence faith, is the opposite possibility welcomed as well? Is in some cases faith supposed to enter the sphere of scientific theorising and influence it? Such a possibility (affirmed by Wolterstorff, 1983:170) does not seem to emerge in Van Niekerk’s arguments. In this sense, the “balance” between faith and science seems to be sometimes compromised by attributing a certain priority to science, rationality or the “natural” sphere.

Yet faith is not supposed to remain floating “in the air”; on the contrary, for Van Niekerk it should be incorporated in the natural world. In chapter one, sentence one of his book *Geloof sonder sekerhede* Van Niekerk (2005:13) states that “to believe in God through Christ, is to give content to the secret of our existence”. Our scientific knowledge and technology is not in a position to get to the bottom of this “mystery” and “secret” of our life. He admits that there are many who are happy to accept that our life in this world is “a brute fact behind which there is no further explanation or secret to explore”. Van Niekerk, however, posits something more, namely a mystery or secret behind or above this brute naturalness.

This awareness of a supra-natural secret has a particular function for Van Niekerk. He (2005:14-15) states that it is unsatisfactory to look at the world in the naturalist way because it is important to ask questions like: “Why this world?”, “Who are we?”, “Why are we here?”, and “Where is everything going?” It is to these questions that faith-belief gives answers. God through

his revelation in Christ gives us at least enough knowledge to learn how to live with the “unrest of the mystery”.

What precisely should the relationship between the natural and the supra-natural be? Van Niekerk (2005:26) answers that faith “deals with the world in which we live everyday” and that it does not only “intend to give us a warranty for a serene existence in the world hereafter”. It is after all in this world that we need to live with the “uncertainty” of faith and where we “need to search for certainty and be able to find it”.

There is thus in Van Niekerk a need to incorporate (our faith in) the supra-natural into (our insight in) the natural. At another place he (2005:16) states in even stronger terms that it cannot be expected from us “to simply dismiss our intellect when we deal with issues of faith”. As people of the twenty-first century we want our “faith in God to resonate with our broad intellectual and cultural orientation” because we “cannot live in different compartments, each one with totally incompatible rules for what makes sense concerning what to say or to know”.

Yet this integration, says Van Niekerk, is not at all easy to attain because the demand is that the supra-natural should adapt to the natural until it becomes an inner-worldly or secular supra-natural. The problem is that human beings of the twenty-first century cannot make peace with what the traditional (especially reformed) confessions teach us because it “clashes directly with the insight of our common sense and with the almost undisputable evidence of science” (Van Niekerk, 2005:16). Van Niekerk suggests that what orthodox Christianity tells us about our lives in this world, is not believable because it does not conform to what we experience on the natural level. Harmony between nature and the supra-natural is not easy to attain.

With this, we have tried to point out both Van Niekerk’s “standard position” and the “oscillations” concerning the relationship between faith and science. It is now important to identify the roots of Van Niekerk’s way of thinking. This we are going to attempt in the next section.

8. The roots of Van Niekerk’s position

What is the directional motive behind Van Niekerk’s thinking? It is a motive that sets the secular or natural character of our world apart from (or alongside) a supra-natural element or dimension that needs to be (re)connected with the natural. The motive that regulates this viewpoint posits two kinds of realities which are in principle quite difficult to integrate with one another. Nature and

the supra-natural are like oil and water; sometimes they seem to mix but they will in the end return to a position where they simply exist next to one another.

Van Niekerk's reflections are inserted in a tradition that is accepted by the vast majority of Christian scholars. This tradition posits a fundamental distinction between the two realms of nature and grace: Reason (including science) is related to nature and faith to grace. This motive is available in a few different versions.

Spangenberg adopts a version that Van der Walt (1994:102 ff.) calls "grace within nature". Regarded as the typical "liberal" model, this approach could also be called "nature above grace" because it gives a priority to "nature" (and therefore to reason). Faith must be reasonable and work according to reason; it cannot go against reason but is rather a result of the deliberations of reason. Then we have the version called "grace opposes nature", that is regarded as the "Anabaptist" model.⁷ Another model that should be mentioned is the "grace above nature" approach, harbouring the idea of both synthesis (with the natural) and control (by grace), typical of the Roman Catholic tradition. Finally, we should mention the "Lutheran" model according to which we have "grace alongside nature".

The latter, we propose, is the model that mirrors most closely Van Niekerk's approach. This may be described as parallelism, and a few sub-versions can be identified as well. First of all, parallelism can be interpreted either as meaning dialogue and concordance or as meaning independence (two closed compartments). In between these two options one can also place a "complementarity" version: Faith and science are independent but equally necessary and correlated. More "modestly", it is also possible to adopt a position of "compatibility": Faith and science may not necessarily clash. All these options offer different nuances within the parallelist position.

What we call "parallelism" is to a large extent classified by Barbour (1990:84-89) under his category of "independence". Barbour regards the "independence" approach as somehow uncomfortable, at odds with Christian "common sense". The reason is that "we do not experience life as neatly divided into separate compartments; we experience it in its wholeness and interconnectedness (...). God is Lord of our total lives and of nature,

7 "Anabaptist" is the definition used by Van der Walt (1994:102 ff.) and others. In contemporary terms, it refers roughly to some Evangelical, Pentecostal and Charismatic communities (without excluding adherents from other traditions). As we noted in the introduction, Van Niekerk (e.g. 2006:40) calls this approach fundamentalist and Tertullianist.

rather than of a separate ‘religious’ sphere” (Barbour, 1990:89). It should be said that Van Niekerk does not simply adopt the independence-model; his approach is more sophisticated. Nevertheless, Barbour raises an important point. Van Niekerk’s position too requires a constant equilibrium, a balance in which, ideally, neither pole (faith or science) should acquire more “weight” than the other. The moment faith starts receiving some sort of priority, we start moving towards the Roman Catholic model. If priority is given to reason, we start moving towards a liberal model. The moment we start introducing the idea of conflict, we move towards the “fundamentalist” worldview.

This balance is difficult to keep. Could this be (part of) the reason why we noticed a few “oscillations”, a kind of “longing” in Van Niekerk’s argumentations?

This is not to say that his position is inconsistent; usually it remains within the parameters of the parallelist model. Yet some of his views (e.g. the role of the subject in science and the intra-secular presence of the mystery of God) seem to open the way to some kind of interaction or even integration. In some cases science seems to be given a sort of priority. Other views (e.g. that science and faith answer different questions and apply to different areas) suggest a relationship of a peaceful but rather indifferent neighbourhood.

9. The problem of conflict and the reformational model

Given the limited space remaining at our disposal, we will be able to discuss only one problem that we perceive in Van Niekerk’s view: In our opinion it cannot properly explain why some theories clash with Christianity. From his point of view, theories are never supposed to clash with religion, unless the (alleged) implications of those theories are somehow extrapolated from their context and illegitimately extended and discussed in a faith-context (or vice-versa). When this problem is avoided, when the borders are respected, no conflict between faith and science is possible. Van Niekerk rejects all positions that posit “constant tension” between faith and science. One could however ask whether his point of view does not posit “constant peace”, a sort of compulsory consensus as the tensions between the two are regarded as either illusory or due to misunderstandings.

We would like to discuss this problem and propose some alternative suggestions. But before doing so, it might be advisable to reply to two objections by Van Niekerk that might be an obstacle on the way to a fair

evaluation of the reformational model. In the process, we will start outlining some fundamental characteristics of the reformational model.

We have already mentioned Van Niekerk's conviction that the reformational position (the school of Dooyeweerd, Vollenhoven, Stoker) is both marginal and fundamentalist. How should one reply to these two contentions? Concerning the first claim, a better answer cannot be found than the one in the following statements of Marsden.

I speak from a particular branch of Christendom, shaped by confessional Protestantism in the Augustinian and more recent Reformed tradition. That tradition is one of several with a distinguished intellectual heritage. Augustinians have characteristically emphasized the principle that faith precedes and conditions understanding: *Credo ut intelligam*. The characteristic insights growing out of this heritage are part of a mainstream of almost two millennia of discussion, and Christians from many other heritages and persons from other religious traditions may find them illuminating as well. Those who recognize the pretheoretical conditions of knowledge should be especially open to the constructive insights of this heritage (Marsden, 1989:9).

If there is some truth in Marsden's words, it cannot easily be said that Dooyeweerd or Stoker lived on the periphery of scholarship. Marsden inserts the "reformational" tradition in the line of Augustine and Calvin and shows that it has obtained a significant following. Of course the reformational tradition constitutes a development and a specific branch of the Augustinian heritage, yet we would like to think that this is not a good reason to regard it as marginal.⁸

Secondly, as it follows an Augustinian line, the reformational approach is not a fundamentalist one. Although Augustine is remembered especially for his "credo ut intelligam" (I believe in order to understand) he also saw very sharply that faith cannot exist without rational knowledge.⁹ The reformational position deepens the Augustinian one by distinguishing between faith (modal) and religion (supra-modal – cf. Dooyeweerd, 1984, 2:298). In this deepening, faith and science find a common "root", which is constituted by religion. Both faith and science then, have something to do with or proceed

8 Duvenage (2015:13-14) identifies the main philosophical trends amongst Afrikaans-speaking thinkers as versions of continental philosophy with roots in British idealism (as against the analytical tradition in English-speaking circles) available mainly at Stellenbosch and Pretoria Universities. He nevertheless recognises also the Christian philosophy at the Potchefstroom and Free State Universities as a type of continental philosophy that was fairly influential.

9 For the influence of faith on reason see Augustine, 1995, 2.12.17. For the influence of reason on faith see Augustine, 2013, 5. 2. 5.

from the human heart, the centre of our identity. It is at this point that one can see how the reformational model is not just another version of the nature-grace paradigm. The reformational stance is that science and faith find themselves in a transcendental and interactive relation grounded in religion, a relation that can sidestep the fundamental tension that, according to Van Niekerk, Tertullian and other “fundamentalists” posit.

What is fundamentalism? Van Niekerk seems to agree with Barbour (1990:77-84) that the positions of Dawkins and the creationists are opposite versions of the same fundamentalism. Is it because the one cancels faith and leaves only science while the other cancels science and leaves only faith? Apparently this is not exactly the case with all creationists: The passion with which they pursue “science” (although in a contestable biblicistic form) should leave no doubts that they are very far from the desire of abolishing scientific theorising.

Are they fundamentalists because they interpret the Bible literally? In this case, one should also admit that their fundamentalism would have little to do with secular fundamentalism a’ la Dawkins. Or are they fundamentalists because they posit a *permanent* conflict between faith and science? Do they really posit this conflict “permanently” (like Dawkins) or only in selected cases (e.g. the theory of evolution)? Apparently they have no problem in accepting several scientific theories that they deem acceptable from their Christian point of view. Are they fundamentalists even if they posit that *sometimes* science and faith conflict? In this case, the vast majority of Christian academics should be regarded as fundamentalists.

We believe a better characterisation of fundamentalism is provided by Clouser (2005:111 ff.) when he says that its key-feature is the belief that the Bible contains (some) scientific theories.

Now, the reformational model does not adopt such a view. In addition, it does not posit a “constant conflict” between religion and science. While certain theories have been criticised rather sharply, on scientific grounds, others have been accepted with considerable ease.¹⁰ Behind this attitude, one might sense the presence of Kuyper’s doctrine of “common grace”. And yet, this model, just like the Augustinian model, does acknowledge that there can be “legitimate” clashes between science and faith. These clashes are

10 In reformational circles the theory of evolution (or rather some of its versions considered “evolution-ist”) has received substantial criticism (cf. Hart, 1984:135-140; Klapwijk, 2008:37-77; Strauss, 2009:102-118) though some authors (cf. Clouser, 2005:347) have been more open towards it. Relativity theory and quantum mechanics have been received with a rather positive attitude (cf. Stafleu, 1980; Strauss, 2013).

not simply due to the fact that the scientist and the believer do not always respect the boundaries of science and faith. They are due to the fact that scientific theorising is not neutral with respect to religious beliefs. This will be our final topic.

10. Reformational suggestions

From a reformational point of view, “science” is not limited to the natural sciences but extends to the social and human sciences as well. Secondly, all human beings are religious beings. It is not only the Christian who has faith or religious beliefs: The atheist, the materialist, the proponent of Marxism, has a world-view, a faith and religious beliefs (Clouser, 2005:58). We think Van Niekerk might agree with this understanding as well.¹¹ When discussing the conflict between “science and faith” we should not forget, in the first place, that there is conflict between different types of faith, different types of religious beliefs and between different types of theories and paradigms. This “rivalry”, often evidenced in the constitution of (sometimes incompatible) “schools”, is present throughout the whole range of academic disciplines. It doesn’t magically disappear when we deal with the natural sciences¹².

There can be different levels of conflict or friction between science and Christianity.¹³ The latter is not only a “faith” or a theology: It entails a religious standpoint, a world-view, philosophical approach(es) and (at least the “weighing”¹⁴ of) theories in the special sciences. Conflict could present itself, for example, when scientific theories incorporate in themselves philosophical assumptions and positions that might not be acceptable to the Christian. We have in mind ontological, epistemological and anthropological assumptions.

11 Van Niekerk (1982:154) assumes an “original act of interpretation” (“‘n oorspronklike interpretasiegebeure”) which he sees behind science. This original interpretation seems to be what he is interested in when he applies the “broadened concept of rationality of hermeneutical philosophy” to get to the “original meaning of reality”.

12 Van Niekerk (1982:157-158) will probably agree with the notion that different religions and worldviews may generate conflicts in the humanities, but not with the idea that this conflict will unavoidably affect also the natural sciences.

13 For a more complete overview of possible conflicts between science and Christianity, a valuable text is Kemp (1996).

14 The phrase “weighing of theories” was abundantly used in Wolterstorff, 1976. It refers to the process whereby a Christian scholar selects, among existing theories, the ones that are more compatible with Christian convictions. At that stage (1976), Wolterstorff often coupled the “weighing of theories” with the phrase “devising of new theories” from a Christian standpoint. The latter idea was later largely abandoned by Wolterstorff. The reformational approach still strives for the ideal of Christian theorizing.

The conflict that may follow could hardly be attributed to a “transgression” of borders, as scientific theories need philosophical backup.

Conflict can also present itself at a deeper, religious level. For example some theories are characterised by a reduction in which one aspect of reality is taken to be fundamental with respect to all the others. This is most of the time the consequence of a religious belief. According to Clouser (2005:23), a belief is religious when it is about someone or something that is regarded as “having unconditionally non-dependent reality”. This is what he calls the “divine per se”, on which everything else is supposed to depend. As Dooyeweerd points out, reductionism is more or less inevitable when the (religious) hypothesis of a Creator fully independent from reality is rejected. The source of reality, the independent “ground” on which everything else depends has then to be located within (some aspect/s of) reality. This choice is eminently religious, yet it is not avoidable in scientific theories, as they have to account for the inter-connectedness of laws and properties belonging to different modal kinds (Clouser, 2005:186 ff.).

This doesn't mean that non-Christian theorists will always be wrong whilst Christians are always right. It also doesn't mean that conflict needs to be the final word. Much depends on the nature and level of disagreement: In some cases theories can for example be re-interpreted on the basis of a non-reductionist view of reality (Clouser, 2005:3). The suspicion remains, however, that the interwovenness of faith and scientific theorising is more complex than scholars working under the “parallelism” paradigm are usually prepared to admit. More positively, we can say that the possibility of Christian scholarship is not as far-fetched as it may appear from a parallelism point of view.

11. Conclusion

In this article we have tried to understand and introduce the views of Anton Van Niekerk on the relationship between science and faith. We have studied the characteristics and roles that he attributes to both science and faith, and the differences between them and we have asked questions concerning the way they are related. We have taken notice of the dialogues that he has entertained with other scholars. We have supported his disagreements with some of his interlocutors and in some cases we have indicated our perplexities. We have tried to identify the roots of Van Niekerk's position and we have provided both critical evaluations and alternatives from a reformational point of view. Surely we have not exhausted all the questions

and explored all the issues. In view of our common task of accounting for the natures and roles of science and faith, listening to Van Niekerk's insights has been a most rewarding exercise. Understanding his point of view also means getting acquainted with an important tradition within Christian scholarship.¹⁵

Bibliography

AURELIUS AUGUSTINUS. 1995. *De doctrina Christiana*. Oxford: Clarendon Press.

AURELIUS AUGUSTINUS. 2013. *De praedestinatione sanctorum*. Oxford: Clarendon Press.

BARBOUR, I. 1990. *Religion in an age of science*. New York: Harper & Row.

BLOCHER, H. 1984. *In the beginning: the opening chapters of Genesis*. Downers Grove: Inter Varsity Press.

CLAASSEN, G. 2007. Geloof, bygeloof en ander wensdenkery: Perspektiewe op ontdekkings en irrasionaliteite. Pretoria: Protea Boekhuis.

CLOUSER, R.A. 2005. *The myth of religious neutrality: an essay on the hidden role of religious belief in theories*. Revised edition. Notre Dame, In.: University of Notre Dame Press.

DOOYEWEERD, H. 1984. *A new critique of theoretical thought*. 4 volumes. Jordan Station: Paideia Press.

DUVENAGE, P. 2015. Die verskynsel van 'n Afrikaanse filosofie. Unpublished paper delivered as public lecture at the Potchefstroom Campus of the North-West University on 20 March 2015.

FEYERABEND, P.K. 1970. Consolation for the specialist. In: Lakatos I. & Musgrave A., (Eds.), *Criticism and the growth of knowledge*. Cambridge: Cambridge University Press. p. 197-230.

GRAYLING, A.C. 1992. Transcendental arguments. In: Dancy, J. & Sosa, E. (Eds.), *A companion to epistemology*. Oxford: Blackwell. p. 506-509.

HART, H. 1984. *Understanding our world: an integral ontology*. Lanham, Md.: University Press of America.

HEIDEGGER, M. 1963. *Being and time*. New York: Harper and Row.

¹⁵ We would like to thank the two anonymous reviewers who helped us improving this text to a considerable extent.

- KEMP, K.W. 1996. The possibility of conflict between science and Christian theology. In: Van der Meer, J.M. (Ed.), *Facets of faith and science*, Vol. 1: Historiography and modes of interaction. Lanham, New York, London: University Press of America. p. 247-265.
- KLAPWIJK, J. 2008. *Purpose in the living world? Creation and emergent evolution*. Cambridge: Cambridge University Press.
- KUHN, T.S. 1963. The function of dogma in scientific research. In: Crombie, A.C., (Ed.), *Scientific change: historical studies in the intellectual, social and technical conditions for scientific discovery and technical invention, from antiquity to the present*. London: Heinemann. p. 347-369.
- KUHN, T.S. 1996. *The structure of scientific revolutions*. Chicago: The University of Chicago Press.
- LYOTARD, J.F. 1984. *The postmodern condition: a report on knowledge*. Manchester: Manchester University Press.
- MARSDEN, G.M. 1998. *The outrageous idea of Christian scholarship*. New York: Oxford University Press.
- MAUTNER, T. 2000. *The Penguin dictionary of philosophy*. London: Penguin.
- POPPER, K.R. 1963. *Conjectures and refutations: the growth of scientific knowledge*. London: Rutledge & Kegan Paul.
- RORTY, R. 1991. Habermas and Lyotard on postmodernity. In: Hoesterey, I., (Ed.), *Zeitgeist in Babel: the postmodernist controversy*. Bloomington, In.: Indiana University Press. p. 84-98.
- SPANGENBERG, I.J.J. 2007. Postmoderne Bybelwetenskap en die Christelike godsdiens - kanttekening by die boek Geloof sonder sekerhede: Besinning vir eietydse gelowiges. *Nederduits Gereformeerde Teologiese Tydskrif*, 48(1&2):188-201.
- STAFLEU, M.D. 1980. *Time and again, a systematic analysis of the foundations of physics*. Toronto: Wedge.
- STRAUSS, D.F.M. 2009. *Philosophy: the discipline of the disciplines*. Grand Rapids: Paideia Reformational Project.
- STRAUSS, D.F.M. 2013. Einstein se relativiteitsteorie: op die kruispunt van aprioriese elemente en empiriese ervaring, *Suid-Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie* 32(1), 8 pages. <http://dx.doi.org/10.4102/satnt.v32i1.329>
- TAYLOR, C. 1980. Understanding in human science. *Review of Metaphysics*, 34(1):25-38.

- TAYLOR, C. 1993. Engaged agency and background in Heidegger. In: Guignon, C.G. (Ed.), *The Cambridge companion to Heidegger*. Cambridge: Cambridge University Press. p. 317-336.
- TAYLOR, C. 1995. *Philosophical arguments*. Cambridge: Cambridge University Press.
- TOULMIN, S. 1992. *Cosmopolis: the hidden agenda of modernity*. Chicago: The University of Chicago Press.
- VAN DER WALT, B.J. 1994. *The liberating message: a Christian worldview for Africa*. Potchefstroom: Institute for Reformational Studies.
- VAN NIEKERK, A.A. 1982. Rasionaliteit, wetenskap en geloof. *Nederduits Gereformeerde Teologiese Tydskrif*, 23(2):150-165.
- VAN NIEKERK, A.A. 2005. *Geloof sonder sekerhede*. Wellington: LuxVerbi BM.
- VAN NIEKERK, A.A. 2006. Die kennisvraagstuk in wetenskap en geloof. *Acta Academica*, 38(1):30-54.
- VAN NIEKERK, A.A. 2007. Oor tradisie, hermeneutiek en wetenskap: mistastings in Sakkie Spangenberg se lesing van Geloof sonder sekerhede. *Nederduits Gereformeerde Teologiese Tydskrif*, 48(3&4):674-685.
- WOLTERSTORFF, N.P. 1976. *Reason within the bounds of religion*. Grand Rapids: Eerdmans.
- WOLTERSTORFF, N.P. 1989. On Christian learning. In: Marshall, P.A., Griffioen, S. and Mouw, R.J., (Eds.), *Stained glass: Worldviews and social science*. Lanham, Md.: University Press of America. p. 56-80.