



## “The unmasking of modern science” – the sequel (II) <sup>1</sup>

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### Abstract

#### “The unmasking of modern science” – the sequel (II)

*In 1982, T.M. Moore claimed that positivism was in the process of being “unmasked”. Its shortcomings were being unmasked by its enemies as well as by its adherents. In describing the process of unmasking, Moore resorted to T.S. Kuhn’s sociological theory of normal science, paradigms, crises and revolutions. Moore then went on to challenge the Christian scholarly community to (inter alia) develop a new paradigm for science. Now, after just more than two decades have elapsed since this exhortation by Moore, a survey had to be done to see to what extent the secular as well as the Christian community has taken up the challenge and how both of them have progressed in the directions that Moore had predicted. It has also become time for the Christian community to assess its own progress towards developing a “new” scientific paradigm. In this, the second part of a two-part article on this subject, the author attends not only to how the Christian community took up Moore’s challenges, but also to how Christian scholars tried to avoid the pitfalls of secularism, postmodern fragmentation and a preference for contingent foundations, which have become the characteristic features of modern science, as outlined in part I of this article.*

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## **Opsomming**

### **"The unmasking of modern science" – die vervolg (II)**

*In 1982 het T.M. Moore die stelling gewaag dat die positivisme in 'n proses van "ontmaskering" vasgevang was. Die tekortkominge daarvan is destyds blootgelê deur sowel die vyande as die aanhangers daarvan. In sy pogings om die ontmaskering te beskryf het Moore gebruik gemaak van T.S. Kuhn se sosiologiese teorie van normale wetenskap, paradigmas, krisis en revolusie. Moore het sy uiteensetting beëindig met 'n uitdaging aan die Christelike wetenskapsgemeenskap om na vore te kom met 'n eie nuwe paradigma vir wetenskapsbeoefening. Nou, nadat net meer as twee dekades verloop het sedert Moore hierdie oproep gedoen het, het die tyd aangebreek om 'n opname te maak van hoe die sekulêre sowel as die Christelike wetenskap gevorder het op die pad wat Moore voorspel het. So 'n oorsig bied ook aan die Christelike wetenskapsgemeenskap die geleentheid om bestek op te neem oor die ontwikkeling van 'n eie nuwe paradigma van wetenskapsbeoefening. In hierdie, die tweede deel van 'n tweedelige artikel oor die onderwerp, skenk die outeur aandag aan hoe die Christelike wetenskapsgemeenskap die drie uitdagings van Moore die hoof gebied het, en ook hoe dit probeer om die gevare van sekularisme, postmoderne fragmentering en 'n voorkeur vir kontingente grondslae – wat volgens deel I van hierdie artikel kenmerkend van moderne wetenskapsbeoefening geword het – te vermy.*

## **1. Introductory remarks**

In the first part of this article, reference was made to a publication by T.M. Moore (1982) in which he surveyed developments in the field of the philosophy and sociology of science, and also called on Christian scholars to apply their energies and efforts to three tasks:

- In the first place, there must be a continuing effort to expose the fallacies and inconsistencies of the secular and evolutionary approach to science.
- Second, there must begin a widespread yet highly organised effort to construct a comprehensive paradigm for scientific activity based upon the Biblical worldview.
- Finally, there must be a sustained and concerted evangelistic effort into the lost world, including among secular scientists. A Biblical view of science, he said, would only make sense to those who had learned to trust in Jesus Christ and had received the gift

of eternal life and the new perspective it provided (Moore, 1982:85-86).

Developments relating to the first of these three tasks were traced in the first part of this article. The other two tasks will now be attended to in this second part of the article. This second part also contains conclusions with respect to all three tasks that Moore set to the Christian scholarly community, and thus serves as the conclusion to the article as a whole. In the process, reference will also be made to how the Christian community strove to avoid the pitfalls of modern science as outlined in section 6 of part I of this article, namely secularism, postmodern fragmentation and a preference for contingent foundations.<sup>2</sup>

## 2. Developments in the Christian philosophy and sociology of science

### 2.1 Introductory remarks

Christian philosophers of science practically immediately latched onto Kuhn's paradigm theory<sup>3</sup> in *Structure*, in the belief that he had made a major contribution towards liberating science from the Christian scholar's arch-enemy, positivism-empiricism-objectivism. Not only was it believed that it had liberated the natural sciences from the bondage of this foe (cf. Fuller, 2000:2), but also the social and human sciences – that had up to that point always striven to be as “objective” and “rigorously positivist” as the natural sciences. It also led them to reflect on the role of the life-view as the “tacit dimension” of scientific practice within a paradigm, as suggested by Michael Polanyi (1891-1976).

Many Christian scholars accepted Kuhn's initial notion of a paradigm as a broad framework within which science is conducted (Kuhn, 1970:271-272). What initially appealed to them was the fact that Kuhn likened the inevitable shift between paradigms to a religious conversion or a change in worldview, the overall effect of which produces a *revolution* in science (cf. Fuller, 2000:2). Later insights

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2 The reader is kindly requested to first read the first part of the article, and then to proceed to the second. The first part contains the problem statement, the purpose of the article, and the method followed in putting the argument together.

3 Note how frequently Moore himself used the term as reflected in section 1 of this article. Klapwijk (1987:109) also regarded historical Calvinism “as (some-what of) a basic paradigm for our scholarly work”.

into Kuhn’s views proved that he was not actually referring to religion or to a cosmoscope or life-view (philosophy of life) but rather to a *scientific* worldview.<sup>4</sup>

It would appear that some Christian scholars also made themselves guilty of using the Kuhnian narrative uncritically to legitimate their “Christian approach to science” as a paradigm on the same footing as in the natural or physical sciences (cf. Fuller, 2000:380).

After realising that Kuhn’s view of the history of science had relatively limited value as an argument in favour of science from a Biblical perspective, Christian scholars (epistemologists; philosophers and sociologists of science) began to employ the term *paradigm* rather more broadly, more in the sense of an *episteme* as referred to by Michel Foucault in his book *Les mots et les choses* (The order of things, 1966), viz. as a term describing the structure of thought that defines the boundaries for what can be thought and said in a particular social and intellectual milieu. In a sense, according to Horrocks and Jevtic (2004:65), Foucault attempted to cast Kuhn’s idea of a paradigm into a new form. An *episteme* is understood to be a time and culturally constrained and determined discourse framework. It is the underlying framework that allows thinking to order itself. It limits the totality of experience, knowledge and truth, and determines the nature of science in a particular time-frame. According to Blake (1996:219), an *episteme*

can be thought of as the structured collection of our deepest and least readily questioned philosophical assumptions: those which exist for us less as articulated and considered propositions than as unnoticed but constraining and determining cultural framework for our supposedly deepest thinking. Its contingency, the possibility of adopting a different framework, is thus not readily exposed to critique.

Foucault (1996) uses several other terms to explain the idea of an *episteme*: *interpretive diagram* (p. 101), *a regime of practices* (p. 103), *a polyhedron of intelligibility* (p. 105), *theoretical scheme*

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4 Cf. Botha (1990:36) for a detailed discussion of the difference between a person’s view of reality and life (his or her *cosmoscope*), and his or her scientific view or image of life and the world. The latter consists of, inter alia, metaphors, paradigms and models. Some philosophers use the term *thought image* when referring to the scientific view or image of the world. Strauss (2001: 90, 91) refers to the role of “theoretical frames of reference” or “theoretical (philosophical) paradigms” – both those of individuals and of a community of scholars.

(p. 105), *a structure of understanding* (p. 108), *rational scheme* (p. 109), to mention a few. Christian scholars tend to see their work contextualised by such a broad framework.<sup>5</sup> According to Foucault (1996:109), Calvinism, like other epistemes, work with “general principles that are not all present in the thoughts of the individuals whose concrete behavior is nevertheless to be understood on their basis”.

Analysis of current Christian or Biblically-founded approaches to science shows, however, that most of the adherents to this approach refrain from presenting arguments in terms of an explicit paradigm, episteme, system or school. Although they seem to be aware of the meaning and impact of terms such as *paradigm*, *normal science*, *revolution*, *crisis* and *paradigm shift*, they prefer not to couch their ideas in these terms.

Although most Christian scholars today are well informed about Kuhn’s and Foucault’s ideas and the discourse surrounding their contributions to the philosophy and sociology of science, they seem to have left all of that behind them,<sup>6</sup> and tend to concentrate on solving problems and discussing subjects from the vantage point of a Biblically based frame of reference for thinking and discourse. In the process, traces of the impact of large-scale philosophical systems, for example of the philosophy of the Cosmomic Idea, can still be detected in their thinking (e.g. references to the structural dimensions and the modal functions of reality that surface relatively frequently in their writings).<sup>7</sup>

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5 Although they would prefer to describe the context as their religious, faith and life-view frame of reference. In a sense, root metaphors as construed and employed by Botha (1990:37; 2004) are reminiscent of epistemes as described here: “A root metaphor is something like a world hypothesis, a broad type of metaphor. Root metaphors are those sets of assumptions, usually implicit, about what sorts of things make up the world, how they act, how they hang together and, usually by implication, how they may be known. As such root metaphors constitute the ultimate presuppositions or frame of reference for discourse on the world or any domain within it”.

6 They discovered, as Klapwijk (1987:102) succinctly said, that advancing the thesis that science (including philosophy) proceeds from worldview principles or from a personal commitment was “no more than kicking in the already open door” of secular science.

7 Examples of this can be found, for instance, in Van Woudenberg (1992 and 1996), Van der Hoeven (1995) and Strauss (2001).

One of the problems that intrigued Christian philosophers (of science) was: How can we take cognisance of developments in secular science, and how can/should we avail ourselves of the valuable insights emerging from those approaches? Their interest in this problem was stimulated by the fact that recent developments in the secular world, such as secularism, postmodernism and the concomitant magpie and constructivist approaches to science, materialism-naturalism, and creative anti-realism unavoidably impacted on their own work as scholars. They realised that it was inevitable that their own thought, spiritual life, and their responses to the world and to God would be influenced, coloured and perhaps corrupted by these ways of thinking. To the extent that this was the case, their intellectual and spiritual lives would be characterised by a lack of integrality, of wholeness, of being all of one piece, says Plantinga (1995:42-43). They would be pulled in different directions, would be inclined to take for granted, unthinkingly assume, ways of thought and ways of looking at the world that did not fit well with the Christian faith to which they were committed. It was therefore of the greatest importance that Christian scholars engage in philosophical and cultural – including scientific – criticism. Plantinga (1995:53) is convinced, however, that if the Christian scholar

does things right, she will not automatically accept current popular accounts; she will offer one of her own, one that arises naturally out of her Christian way of thinking about the world ... Her account will of course be designed to fit and illuminate the kinds of knowledge we all have in common: perception, memory, reason, and the like; she is thus in the world. But it will also be designed and perhaps specially designed to fit and illuminate kinds of knowledge her unbelieving compatriot will dismiss: our knowledge of God, of the great truths of the Gospel, and of how to appropriate the latter for our own lives; she is thus not of this world.

## **2.2 The stewardship approach to knowledge in a nutshell<sup>8</sup>**

As indicated in sections 1 and 2 of the first article, Moore envisaged Christian scholars involving themselves in a process of further developing and expounding such a Christian view of science and scholarship, i.e. a view based on a Biblical life-view or cosmology.

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8 The roots of the stewardship approach can be traced back to, inter alia, Dooyeweerd's theory of transcendental criticism and Vollenhoven's thetical-critical method.

One can today state that the community of Christian scholars indeed has been taking up this challenge. An important development in this context was the emergence of “stewardship epistemology”.<sup>9</sup> This epistemology is based on what Klapwijk (1987:105) called “a distinctively Christian, or more specifically, reformational position”.

The stewardship approach has at its core a fiducial constant, which is described by Fowler (2004:58) as follows:

A fiducial constant refers to a reliable object worthy of our trust. All human life, in the end, operates on the basis of such trust in what we regard as a worthy object of trust. ... The Christian is called to live the whole of life guided by a belief in God in Christ as the fiducial constant, the one worthy of all our trust. We also have a sound reason for this trust. It is founded in the experience of God’s revelation of himself, in all creation, in Scripture and, above all, in the person of Jesus Christ.

Klapwijk (1987:105) describes this position further as follows: “Our own position, although we stumble, is in Christ ...” Plantinga (1995:46) agrees with him in saying that Christian scholars want to know and understand themselves and the world. However, their way of understanding will be inevitably different from that of those who do not share their basic commitment to the Lord. The Christian scholar also possesses other kinds of knowledge that others rarely think about, such as knowledge of God, knowledge of the truths of the gospel, knowledge of how they can have access to their only comfort in life and in death, and knowledge of how they can achieve

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<sup>9</sup> Stewardship education is, for instance, rooted in stewardship epistemology, as expounded inter alia by H. Dooyeweerd, D.H.Th. Vollenhoven and H.G.Stoker, to mention only a few. For discussions of aspects of stewardship education, following in the footsteps of, for instance, J. Waterink, J. Chr. Coetzee and A.H. de Graaf, cf. the following (to mention only a few): Fowler (1987); Van Brummelen (1988); Fowler, Van Brummelen & Van Dyk (1990); Fowler (1991); Edlin (1994); Marsden (1997); Van Dyk (1997) and Van Dyk (2000). The point of stewardship education, says Blomberg (1992:191), is to respect the religious responsibility of the child as an individual made in the image of God, so that he/she may begin to exercise their dominion in unfolding the creation in service of others. (Similar lists of contributions to the fields of technology, sociology, economy and other disciplines can be compiled.)

A detailed discussion of developments in reformational philosophy and epistemology, in particular, goes beyond the scope of this article. Klapwijk (1987) presents a fairly detailed discussion of developments in this context for the period from the 1930s to the mid-1980s. He describes the developments in terms of seven themes. The stewardship approach can arguably be regarded as yet another theme.

their chief end of glorifying God and enjoying him for ever (Plantinga, 1995:48-49). Faith is also another kind of knowledge<sup>10</sup> (Plantinga, 1995:51).

The central thesis of stewardship epistemology is that man, the knowing subject, is placed in the world to rule over it for God as his steward. Such dominion, says Blomberg (1992:186), presumes knowledge, understanding, wisdom, both of God's will for his creatures and of the creatures that are subject to him. Man should take cognisance of the structure of created reality and the divine norms given for and in creation, and should respond faithfully to them. The way we respond to the things that we experience around us will differ from situation to situation, not by the steward's arbitrary choice, but because God has set a law for all creaturely functioning. Knowledge is knowledge of a law-ordered world, including of the leading functions of the things that we encounter. In such subject-object encounters there is an opening or disclosing of meaning. Although the experience that all people have is the same, because all of them live as creatures in God's world, their response to their experiences (their knowledge) will differ according to their religious commitment. Our response in each situation is part of our responsibility to God (Blomberg, 1992:187-189). In the context of the stewardship approach,

... all knowing necessarily involves obedience to the Word of God. Knowledge is not a matter of (cognitive) facts plus (attitudinal) values. All knowledge involves analytical distinctions but no more than it involves commitment to obedient action: we can only really speak of 'knowledge' when an integral subjection to the norms of human acting is involved (Blomberg, 1992:189).

As far as the knowable is concerned, every creature and every event says to man: "I am responding in my own God-ordained creaturely way to the Word of God. Treat me in accord with that Word!" The responsibility of the knower, then, is to lead each creature and guide each event to more fully display (respond to) its potential to glorify God. All the actions of the knower should be

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10 According to the reformational view, all these faculties or powers that human beings have been endowed with by their Creator were corrupted by the fall into sin, and therefore by sinful human nature. Fortunately, "the Lord took dramatic action to enable us to be reborn, regenerated, to regain our lost relationship with him, to live once more the way he intended us to" (Plantinga, 1995:49-50).



obedient responses to the Word of God, and not a wilful satisfaction of his or her own desires (Blomberg, 1992:191-192).

Christians who align themselves with the stewardship approach resist the Enlightenment view in terms of which universal reason is seen to reign supreme – also in the domains of science and scholarship. They do not accept the rationalist assumption that there is a universal and generally applicable set of criteria in terms of which the knower can determine the *truth* or *justification* of knowledge or science. They also do not believe in the power of human rationality to provide a universal structure of certainty for human life (Fowler, 2004:43). They see reason as only one of many modal functions with which human beings have been equipped by God, as the instrument by means of which they can grasp the law-subjected patterns in creation. They also maintain that the process of knowing is always somehow determined by transcendental conditions,<sup>11</sup> in other words conditions of possibility, such as the knower's religious orientation or commitment, his or her life-view, personal faith, theoretical and pre-theoretical assumptions and convictions.

There are three factors involved in the human knowing activity: the knower, the knowable, and the law-like structures that govern both the knower and the knowable in the knowing situation. There can be no knowing without these law-like structures, the ordering principle, governing both the knower, the act of knowing and the knowable in the knowing situation. There is some kind of law that ensures that our world (reality) is the kind of world it is and not another kind. (This is the essence of the Christian scholar's cosmological-structural a priori.) In relation to the knowing activity, this law must govern both knower and the knowable in the knowing situation (Van der Walt & Fowler, 2006:33-46).

Christian scholars take a "common sense" understanding of how the human mind works as their point of departure: the human mind works with sense data and processes this data. Thoughts, (conceptual) schemes, thought-events, words, utterances, cognisers and reactors should be seen as possible facets of mind

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11 *Transcendental* in this context means *underlying* or *basic*, a *condition of possibility*. It should not be confused with Kant's idea that the rationality of the human individual is universally equipped with an *inbuilt structure* for ordering human experience in order to construct a systematic knowledge with universal validity (Fowler, 2004:51).

constructions. Human beings possess different methods of mapping an independently identifiable reality. They arrange beliefs and sense data, desires, the utterances of others, into an as maximally coherent bundle as they can get. Human beings have been created with different basic cognitive faculties or noetic abilities: perception, memory, intuition, moral knowledge/sensibility/intuition, reason (the faculty of a priori knowledge and belief), the ability to reason, of introspection, sympathy (whereby one can understand the thoughts and feelings of others), induction (whereby one can learn from experience), credulity (the ability to believe evidence presented by others), an attitude of belief in the ordered structure of reality, an attitude of trust in God<sup>12</sup> and his order-giving Word, of submission to God, the ability to have both head-knowledge and action-knowledge (Blomberg, 1992:185; Plantinga, 1995:48; Van Woudenberg, 1995:291). Human beings have these faculties or powers or cognitive processes by virtue of creation, and it is by virtue of their operation that they form beliefs and acquire knowledge (Plantinga, 1995:49).

Creation and creation order are not social constructions of our own minds, but a gift. And with every gift, say Middleton and Walsh (1995:163), there is also a task; it comes with a call. The human being is, therefore, essentially *homo respondens*. “While an order is quite literally given to life, we are also called to give order to life. Such an ordering of life is constitutive to human culture-forming”. Middleton and Walsh (1995:163) also call for a common sense, balanced approach:

If scholars only noticed the given, indeed gift, character of creation’s order, thereby ignoring our ordering role in the world, then they will likely succumb to the temptation of an authoritarian and absolutistic realism. They will identify their own worldview and cultural praxis so closely with the given order of the world that they will be closed to all other perspectives. The result will be precisely the self-protective, myopic and aggressive worldview that postmodern authors perceive in modernity. If, however, they only attended to the reality-constructing activity of ordering their own world, then regardless of how much they want to avoid totalizing violence, their efforts will lack creational integrity and direction.

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12 The *sensus divinitatis*: the ability through which one can know God.

## 2.3 Different emphases

All Christian scholars, including the author of this article,<sup>13</sup> broadly share the stewardship approach to knowledge construction and science/scholarship. A trawl of the literature shows, however, that each of them tends to each emphasise different aspects of that approach. To illustrate this, compare the following random examples:<sup>14</sup>

- Following the philosophy of the cosmonomic idea, Schuurman (1994:94, 149-151) emphasises the role played by the *religious ground motive* of creation, fall into sin and redemption. He also stresses *responsibility, love, righteousness, justice, service, mercy, thankfulness and a readiness to make sacrifices, the role of norms, creational order, the full armour of faith and recreation in Christ* as part of how he approaches stewardship philosophy (i.c. of technology).
- Others, like Monsma (1998), see stewardship as only one important aspect of their approach, together with *wealth, sin, redemption, faith* and the *social aspect of humanity*.
- Venter (2000:19-20), in turn, emphasises the aspect of care (*caritas*). According to him, *caritas* is the expression of a relationship with something that one holds dear. *Caritas* pertains directly to stewardship: to take care of that which has been entrusted to you. Love in the sense of *caritas* entails accepting personal co-responsibility, “sharing in caring”. It embraces the whole of the human being, and lends integrity to the availability of one’s gifts. In the context of science, *caritas* means accepting *responsibility* with and for all others involved, including creation itself and all co-workers.
- In her research, Botha (2004:499, 521) tends to focus on how *root metaphors* relate to the Christian scholar’s quest, and how

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13 Cf. the following recent publication: De Mynck and Van der Walt, eds. 2006. Together with Stuart Fowler, Van der Walt was responsible for the first chapter of this book, entitled *Constructivist teaching-learning theory: a stewardship approach*. Section 1.5 of this book gives a succinct outline of a stewardship approach.

14 The purpose here is to show how different Christian scholars emphasise different aspects of the stewardship approach. Detailed discussions of the different positions held by scholars are beyond the purpose and scope of this article.

choices for hermeneutical keys to Scripture relate to metaphorical keys chosen as means of access to reality. Metaphors, she found, make and remake the world by classifying and categorising it in certain ways.

- In an article on how to approach the natural sciences, Strauss (2001:90-93) emphasises the need to penetrate to the *ultimate core commitment* to an underlying and directing *religious orientation*. It is important to make an appeal to the *convictions and suppositions* which influence theory construction, and to distinguish these from the *underlying philosophical and world- and lifeview attitude*. In his opinion, *basic philosophical issues* determine the foundational way that goes on in the natural sciences. A person who wants to account for them theoretically does so under the influence of basic (ultimate) commitments. In his discussion, he also highlights the roles played by the *life- and worldview* and our understanding of the *law-order given for creation*.
- *Critical realism* is a stewardship approach in which its adherents try to maintain the Scriptures in the very highest place in shaping their thinking and living. It declares that “all of life is lived out by human beings either in obedience or disobedience to God’s laws” (Edlin, s.a.). Critical realists strive to see reality as it really is, in all its fallenness (Edlin, 1999:205). This idolatrous culture is then critiqued from a Biblical perspective (Edlin, 2004:13). The distinct feature of critical realism, according to Erickson (2001:263), is its interest in *perceptual processes*. Erickson (2001:264), a self-declared critical realist, summarises his position as follows: “... while we have no absolute way of establishing the existence of objects external to ourselves, or of being certain that our ideas of those objects correspond exactly to them, we can find ways of cross-checking our understanding, in such a way that we can communicate with one another. We may need to qualify that further, by terming it ‘perspectival critical realism’. That means that although we may view reality from different perspectives, there is a *common reality* there to which we are relating and of which we are speaking.”

Examples like these abound. The point is that although Christian scholars tend to emphasise different key aspects in their respective approaches (epistemology, methodology), they all somehow adhere to the basic notion of stewardship scholarship. Whereas Schuurman (1994:94), for instance, merely mentions the importance of *love* in passing, Venter (2000) employs *love (caritas)* as a key concept in

his vision for universities. Van der Hoeven (1995:61) also recognises the importance of *love*; however, he does not use it as a key concept, but rather to qualify the process of *touching* one's fellow philosophers/scholars while struggling with them about the validity of knowledge. In essence, however, all three of them use the same over-arching stewardship approach. This can probably be said of most Christian scholars plying their trade at the end of the previous century, and now in the first decade of the 21st.

## 2.4 Still an unarrested social movement?

The way the stewardship approach to science and scholarship is slowly but surely taking shape arguably gives support to Fuller's (2000:402) contention that "Kuhn be turned on his head" by arguing that "a paradigm is nothing more than an arrested social movement". The stewardship approach to science is still clearly in the "movement phase"; it has not yet been "arrested", i.e. forced to become a paradigm in the Kuhnian sense. At this point in time, the stewardship approach can still be regarded as a "flexible organised cognitive praxis" that produces knowledge for enabling and disabling certain transformations in social life. Successful movements manage to retain their dynamism and flexibility, their distinctive form of consciousness, as they gain credibility in the course of achieving concrete goals. The stewardship approach, based on Fuller's thesis, has clearly not yet evolved into a paradigm (cf. Fuller, 2000:403). According to Plantinga (1995:47), to be in transition should indeed be a perennial feature of Christian scholarship. The city of God, and the citizens therein, he says, are never completely formed and developed.<sup>15</sup>

## 3. Conclusions

The discussion in this two-part article began with reference to the three-fold challenge of Moore (1982) to the community of Christian scholars. In view of the discussion of recent events in the spheres of epistemology and philosophy/sociology of science, it can be con-

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15 In his opinion, the same applies for the city of the world to which the city of God (Augustine) stands opposed. The city of the world as well as its citizens is also not completely formed and developed, which explains why they keep on searching for the "final paradigm". In Plantinga's opinion, they have no place for the notion of truth that is intimately connected with God (Plantinga, 1995:48), which is why they are doomed to keep on searching for it.

cluded as follows with respect to each of the three challenges put forward by Moore:

- To continue to expose the fallacies and inconsistencies of the secular and evolutionary approach to science.

Christian scholars have responded in several ways to the recent developments in the secular approach to science. On the one hand, they tend to unmask the fallacies and the inconsistencies in the secular approach, while on the other hand they realise that the so-called secular approach is a depiction of the world in which they live and work as scholars themselves. They study and apply developments in secular philosophy and sociology of science, such as the paradigm theory of Kuhn and the episteme theory of Foucault, but once they realise the inadequacy of such theories and philosophical/epistemological positions, they relinquish them in favour of developing their own. They take cognisance of new frameworks on offer and of new directions that are being set in the secular world. As Fowler (2004:55) recently remarked, it would be foolish to dismiss them outright as visions of despair and hopelessness, without any power to give a sense of meaning and purpose to human life. As a consequence of this line of thinking, Fowler formulates a new challenge to Christian scholars, a challenge that updates Moore's of more than two decades ago: "The challenge for Christian scholars, where we find these alternatives lacking, is to offer a coherent alternative of our own that is not based on a return to the discredited certainties of modernity but meets the challenges of today's postmodern world." He proposes a method for doing so:

My proposal is that we should mount (the) necessary resistance to the idolatrous forces governing today's postmodern world by taking the path of critical participation. On the one hand, we should recognise and embrace the realities of the postmodern world as full participants in that world. It is the world into which our Lord has sent us and which we are to embrace in love as he embraced the world into which he came. On the other hand, we should be critical participants offering constructive alternatives for remedying the fundamental flaws in our world. Pointing out the weaknesses is not enough; we must offer realistic ways of strengthening those weaknesses (Fowler, 2004:57).

By suggesting the use of this method, Fowler echoes a suggestion made a few years previously by Geertsema (1989:89/3) that Christian scholars should engage in a critical and constructive

conversation with secular scholars. In the latter's opinion, Christian scholars used to concentrate too much on critical judgement of various ideas and systems in the fields of theology, philosophy, politics and the different scientific disciplines. The time had come, he felt, for constructive engagement about the questions that surface in the different disciplines. Fowler's advice is also in line with Klapwijk's (1995:175 ff.) method of transformational philosophy or criticism,<sup>16</sup> a way of critically appropriating ideas and notions from secular philosophy and science after having purified them on the basis of the fiduciary constant of Christian scholarship. In Klapwijk's (1987: 104) opinion, the time of either separation with or accommodation of the secular world has gone, which implies that Christian scholars have to engage with the world in terms of the transformational method.

- To begin a widespread yet highly organised effort to construct a comprehensive paradigm for scientific activity based upon the Biblical worldview.

This discussion has shown that the community of Christian scholars has indeed made progress towards developing a comprehensive approach to scientific activity based on a Biblical worldview, viz. the stewardship approach, of which the fiducial constant is the belief in the God who has revealed himself in the Bible.<sup>17</sup> The stewardship approach is, however, still an unarrested social movement, a work in progress – in other words, not yet a paradigm in the Kuhnian sense of the word. In Fowler's (2004:59) opinion, it is the alternative that Christian scholars must offer to the world. Its fiduciary foundation should not be seen as merely an added dimension of life, but as the secure foundation on which all human endeavour must be built if the

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16 Also cf. Klapwijk (1987:103 ff.) for a brief discussion of this method in the context of religious antithesis. His definition of *transformational philosophy* is as follows: "The idea of transformational philosophy is based on the notions of assessment, arrest, and appropriation. Transformation is critical assessment, selection, and appropriation of existing intellectual goods in such a way that their incorporation into a Christian worldview means a restructuring and redirecting of their content, a redefining of their scope of meaning" (Klapwijk, 1987:105). It is, of course, important to keep in mind that this method should be used in conjunction with other methods of reformational philosophy, such as transcendental criticism, what Klapwijk (1987:124) called *transcendental hermeneutical reflection*, and Vollenhoven's *problem-historical method*.

17 *Fides*, to accept a proposition as true, is presupposed by *fiducia*, trust (Van Woudenberg, 1995:295-296).

people of the world are to achieve the fullness of human life that everyone desires.

- To continue a sustained and concerted evangelistic effort into the lost world, including among secular scientists. A Biblical view of science, Moore (1982:85-86) said, would only make sense to those who had learned to trust in Jesus Christ and had received the gift of eternal life and the new perspective it provided.

It has to be made clear to the secular community of scholars, as part of this “evangelistic effort<sup>18</sup> into the lost world”, that since the collapse of modernity’s rational certainties, this merely disguised under secular language the religious roots of secularised science. The trust in autonomous rationality as the fiducial constant of secularised science was itself a commitment of faith of the same kind as a religious commitment (Fowler, 2004:59). The discussion in this article supports Fowler’s (2004:59) conclusion that in the present postmodern world, Christian scholars do not need to argue the case for recognising that human rationality cannot provide a secure foundation for human life, since it can only function on the basis of trust as fiducial constant. A wide range of secular thinkers has already made this case very clearly.

In declaring that all our endeavours are founded in trust in the God who reveals himself as the fiducial foundation for our rationality we are in tune with the prevailing intellectual climate. What we do need to do is to challenge others to similarly recognise and articulate the fiducial constant on which their rational endeavours are founded (Fowler, 2004:59).

These three conclusions based on Moore’s challenges also cast light on the preliminary conclusion that was drawn towards the end of part I of this two-part article (section 6), namely that modern

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18 Klapwijk (1987:104) comments as follows with respect to this evangelistic drive: “The situation in which we find ourselves today as Christian scholars is really a missionary situation. It resembles that of the first Christians who had to carry the biblical message into an overwhelmingly apostate culture. It resembles too the situation one finds today in many mission fields.” While Plantinga (1995:37) feels that negative apologetics might be necessary in certain circumstances, i.e. the attempt to defend Christian belief against various sorts of attacks that are brought against it, the need of positive apologetics cannot be denied in some situations, that is to offer theistic arguments. According to Van Woudenberg (1995:294) such arguments are superfluous: the belief in God is “properly basic”, in other words, a Christian can believe in God without being able to offer arguments or reasons to justify this belief. Belief in God rises spontaneously in the heart of the believer.



science seems to be hampered by secularism, postmodern fragmentation and a preference for contingent foundations.

- Scholars who adhere to a stewardship approach to science and scholarship reject the private-public dualism inherent in secularism. According to a Christian life-view, man is the steward of every inch of God's creation. Based on the integrality, radicality, wholeness and creational integrity of a Christian life-view, there can be no *public* part of creation where the sovereignty of God should or may not be proclaimed.
- For the same reasons, the stewardship approach to science and scholarship also strives to avoid the postmodern fragmentation that currently haunts secular science. The stewardship approach does not see itself as particularly true or advantaged in itself, but rather takes every concrete historical situation it is confronted with, including its intellectual and life-view heritage, as its hermeneutical starting point. It then strives purposefully for a general, integral, radical, balanced and all-embracing philosophical view of reality, but seeks to attain this primarily through a mastering of the philosophical problems as they come up in *local* situations, and secondarily in cross-cultural communication. It then uses what Klapwijk (1987:130) called the creational-messianic perspective as its transformational guideline. This approach means that reformational thinking should be open to a diversity of *local* theories, or at least theories of which the local situation and background are recognisable. In this manner, Christian scholars become critical participants in the postmodern world in which they live.
- Scholars who align themselves with the stewardship approach share with their postmodern colleagues the tendency to reject classical foundationalism such as represented by Descartes. As Erickson (2001:260) correctly points out, the stewardship approach to science and scholarship involves a foundationalism of a more modest sort. The stewardship approach finds its foundation in the Word of God, but based on a particular scholar's understanding of the will of God, as expressed in his Word, he or she formulates certain basic propositions in terms of which other propositions can be justified. This type of foundationalism is not the absolute type found in classical foundationalism. It is rather a fallibilist form of foundationalism in the sense that it recognises the possibility of error and misinterpretation and of being affected by the conditioning that postmodernists have described.

## General conclusion

The Christian community has since the publication of Moore's *The unmasking of modern science* in 1982 indeed taken up Moore's three-fold challenge. It has continued to expose the fallacies and inconsistencies of the secular and evolutionary approach to science. They were helped in doing so by the fact that secular scholars have discovered themselves that their work is being haunted by secularism and postmodern fragmentation. The Christian community has also begun with a widespread effort to construct a new approach for scientific activity based upon the Biblical worldview, namely the stewardship approach. This approach still has the status of an unarrested social movement; it has not yet taken the form of a paradigm in the Kuhnian sense of the word. And finally, the Christian community has continued a sustained and concerted "evangelistic effort into the lost world" (the words of Moore (1982:85-86)), by expounding the stewardship approach and applying the transformational method. In this process, many Christian scholars have come to understand that it is one thing to say that they have the truth of the Word of God but altogether another thing to say that this truth can be fully understood. Based on this insight, they have relinquished the search for classical forms of foundationalism in favour of more modest, *local* and fallibilist forms of foundationalism.

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**Key concepts:**

Christian scholarship  
meta-analysis  
meta-theory  
scholarship  
science  
secularism

**Kernbegrippe:**

Christelike wetenskapsbeoefening  
meta-analise  
metateorie  
sekularisme  
wetenskap  
wetenskapsbeoefening