

Pioneering an integral Christian philosophy: The approach and methodological contributions of HG Stoker (1899-1993)

MF van der Walt
11944986

Dissertation submitted in fulfilment of the requirements for the
degree *Master* in *Philosophy* at the Potchefstroom Campus of
the North-West University

Supervisor: Prof R Coletto

October 2016

This dissertation is submitted in article format as provided for by General Academic Rule 4.1.1.1.4 of the North-West University.

The first article (<http://dx.doi.org/10.4102/ids.v50i1.2040>) contained in this manuscript was published in *In die Skriflig / In Luce Verbi* under the Creative Commons Attribution 4.0 International (CC BY 4.0) License.

The author's intention is to still submit the second article of this manuscript to the *Journal for Christian Scholarship* or any other suitable peer-reviewed journal. For the sake of uniformity, the same style as required for the first article is maintained throughout. See Appendix 1 for the requirements of *In die Skriflig / In Luce Verbi*.

Acknowledgements

I wish to thank my supervisor, Professor Renato Coletto, for his encouragement, guidance and advice. I am grateful for the willingness of Professors Roy Clouser and Danie Strauss to discuss with me the issue of identifying a type law. A word of thanks to Professor Ponti Venter for suggesting that I focus on Stoker's methodology and to Professor Bennie van der Walt for helping me better understand Stoker's philosophy. I wish to thank the various mentors I have had. Some of them I have known personally; others, like Stoker and the reformational philosophers of his generation, I only learnt to know through their precious writings.

Aan my broer, Tjaart.
Wat 'n vreugde sou dit wees om met jou te kon deel.

Summary

Pioneering an integral Christian philosophy: The approach and methodological contributions of H.G. Stoker (1899–1993)

The purpose of this project is to critically reflect on the approach H.G. Stoker espoused as a pioneer of an integral Christian philosophy and to evaluate the contributions he made to reformational methodology. Reservations as to whether, or to what extent, Stoker's philosophy can be truly characterised as integrally Christian cast a shadow over his achievements and promising contributions. Disappointingly, the dialogues and debates about these issues have thus far been insufficient, and sometimes unsatisfactory. This makes it difficult to undertake an accurate evaluation of his methodological and other contributions.

In the hope of bringing more clarity to the character of his philosophical project, it will be argued in the first article that Stoker employed a modified theology-based approach. By showing that this approach served to reconcile his dual commitment to reformed scholasticism and reformational philosophy, certain problems with Stoker's philosophy will be highlighted. Some of these problems include an insufficient anti-synthetic attitude, the consequences of which appear not only in his encyclopaedia of the sciences and his ontology, but also in his theory of methods (see the second article).

In his methodology, the problem manifests as an inability to fully cast off a rationalist heritage that misconstrued method as more than merely a means to an end. Construing method in such a way is diametrically opposed to the deeper intentions behind Stoker's own methodological perspective. Moreover, his perspective can be appreciated precisely for underscoring the limited role of method as merely a means. The perspective he proposed also gives full recognition to the plurality and complementarity of methods, and attempts to disclose the normative dimension in which they function.

Key words:

H.G. Stoker	Method
Reformational philosophy	Scientific method
Christian scholarship	Reformed theology
Theology-based approach	Calvinism
Methodology	Encyclopaedia of the sciences

Table of contents

INTRODUCTION	1
Background	1
Problem statement	6
Central theoretical stance	6
Leading theoretical arguments	6
Objectives	7
Outline of the dissertation	8
Method	8
Area of study	9
Contribution	9
References	10
ARTICLE 1: Critical reflections on H.G. Stoker's (1899–1993) approach towards the elaboration of a Christian philosophy	13
Abstract	13
Introduction	13
Historical background	14
Two currents of Calvinist thought	15
Encyclopaedia and the theology-based approach	17
Stoker's encyclopaedia of the sciences	17
A qualified theology-based approach	19
Criticizing the encyclopaedic scheme and the approach related to it	24
Accounting for non-Christian theology	24
Conflating structure and direction	25
Inconsistent application of the scheme	26
Nature and super-nature	27
Similarity in pattern	27
Integral Christian philosophy at stake?	30
Establishing pseudo congruency	31
Conclusion	33
References	35

ARTICLE 2: An exploration of H.G. Stoker’s (1899–1993) contributions to methodology	39
Abstract	39
Introduction	39
A milieu of methodological preoccupation	40
Stoker’s early methodological exposure	41
A survey of methodological contributions	44
Overview of scientific methods	44
Discussion of specific methods	45
An analysis of the nature of method	47
A few critical notes	50
Deontology of scientific methods	52
Systematic considerations	53
Methods as historically qualified artefacts	57
Conclusion	59
Appendix	60
References	63
CONCLUSION	65
Objectives of the first article	65
Identifying Stoker’s approach	65
A critique of Stoker’s approach	65
Making Stoker’s work more intelligible	66
Objectives of the second article	66
A backdrop to Stoker’s contributions	67
Stoker’s valuable contributions to methodology	67
The normative dimension and artefactual nature of methods	67
APPENDIX: Requirements for <i>In die Skriflig</i> / <i>In Luce Verbi</i>	69

List of figures

Article 1

Figure 1: Stoker's encyclopaedia in rudimentary form	18
Figure 2: The ambiguous position of heaven	27
Figure 3: The dual character of theology in Thomas Aquinas	28
Figure 4: The dual character of theology in Herman Bavinck and Stoker	30

Article 2

Figure 1: A representation of Stoker's analysis of method	50
Figure 2: Stoker's formal, intrinsic and transcendent norms	56

Introduction

Background

The South African philosopher, Hendrik Gerhardus Stoker (1899–1993), made his mark in philosophy already as a young doctoral student with his thesis on the phenomenon of conscience. Max Scheler included it in his *Schriften zur philosophie und soziologie* (Stoker, 1925), while Heidegger (1967:495) referred to it rather extensively in his *Sein und zeit*. H.G. Stoker's lasting legacy, however, is arguably his role in establishing reformational philosophy in South Africa. Significant interchange between Stoker and two Dutch peers, viz. Vollenhoven and Dooyeweerd, did occur, but Stoker's philosophy was never simply 'an export product' from the Netherlands (cf. Van der Walt, 2007:220). Along with Vollenhoven and Dooyeweerd, Stoker can be regarded as a pioneer of reformational philosophy in his own right.

Stoker, in other words, made a unique contribution to reformational philosophy. Van der Merwe (1993:96) lists human freedom, justice, labour, education, history, language, knowledge and the human being as some of the important subjects on which Stoker wrote. One area that does stand out, however, and requires further attention is his methodology.¹ The importance that a theory of methods had for Stoker is reflected in the fact that the title of one of his major publications is *Principles and methods in science*. Prescribed from 1955 onwards as a textbook for a compulsory course for all first-degree students at the Potchefstroom University for Christian Higher Education (PU for CHE) (Stoker, 1961:7), it had a standing comparable to that of Vollenhoven's (2005) *Isagôgè philosophiae* at the Free University of Amsterdam. Moreover, his colleague, N.T. Van der Merwe (1993:96), identified three major areas deserving future research regarding Stoker's philosophical contributions, one of them being methodology.²

¹ According to Caws (1967,7:339) 'the term "method"... refers to the specification of steps which must be taken, in a given order, to achieve a given end'. 'Method' should not be confused with 'methodology', which refers to the study or theory of method (Blackburn, 2005:233). Consequently, the terms 'method' and 'methodology' are not interchangeable.

² Venter (1981) is one of the few who employed and elaborated H.G. Stoker's theory of methods. The other two major areas of interest mentioned by Van der Merwe are i) Stoker's deontology and ii) his typology of time. Regarding the former, a comprehensive and systematic elaboration and evaluation was done by H.G. Stoker (Jnr) (1983). P.H. Stoker (2008) made rather extensive use of H.G. Stoker's typology of time in an article addressing the question of what time is.

Notwithstanding Stoker's achievements and promising contributions in methodology, there are still some perplexing issues surrounding his philosophy. His ideas seem to have had a mixed and often confusing reception by other Calvinists. While he found support amongst some reformed theologians,³ he received criticism from several notable reformational philosophers, amongst whom Vollenhoven (2011), Dooyeweerd (1957, 3:61–76) and Troost (1958) may be counted. Taljaard (1976), his student and later colleague at the PU for CHE, is also one of his notable critics. What is at stake in some of the critiques is nothing less than the characterisation of his philosophy as being integrally Christian.

In this respect, a good example is Malan's (1968) doctoral thesis *A critical study of the philosophy of H.G. Stoker from the standpoint of H. Dooyeweerd*. In this study, Malan evaluates Stoker's attempt at developing a genuinely Christian philosophy. Malan (1968:334) claims that the religious basic motive of scholasticism, viz. nature and grace, is Stoker's ultimate starting point. In Dooyeweerd's (1979:11–14) philosophy, this motive is regarded as a futile attempt at synthesising stances which are ultimately irreconcilable (in this case Christian with pagan Greek thought). Such a synthesis therefore displays an internally dialectical character. The unremitting internal dualism of this religious motive thus continuously drives thinking apart into polar directions, thus forming various polar dualisms alien to biblical thinking. It is in this sense that Malan interprets as dualistic Stoker's distinctions between inter alia i) faith and knowledge, ii) authoritative principles and self-evident principles, iii) knower and known, iv) subject and object, v) norm and law, vi) soul and body, vii) Scriptures and the cosmos as sources of knowledge and viii) theology and philosophy. Malan (1968:334) thus characterises Stoker as a synthesis thinker, whose philosophy includes 'partially Christian and partially non-Christian speculative metaphysical content'.

That is of course only one side of the story. In his response to Malan's critique, Stoker's (1970:411–433) exasperation at being misrepresented is evident.⁴ According to Stoker (1970:411, 414), Malan's misunderstandings of his ideas are so great and numerous that the critiques levelled against him in many instances simply miss the target. That there genuinely were major shortcomings in Malan's thesis is confirmed in no uncertain terms by a third party, namely Hendrik Hart. According to this

³ The South African theologians J.A. Heyns (1994) and L.F. Schulze (1994) are examples.

⁴ During a recorded interview held on a later date, Stoker expressed even more vividly his dissatisfaction with Malan's treatment of his philosophical views (see Stoker, 1982).

reformational philosopher, Malan's 'whole analysis of Stoker is out of kilter' and his presentation of Stoker's views tends to be 'very dubious' (Hart, 1971:114–115).

Although Hart thereby managed to vindicate Stoker's contribution to some extent, his evaluation still does not treat or clarify certain problematic features of Stoker's philosophy in any depth. The reason for this is that Hart's evaluation is limited in its aims. What he wanted to show was Malan's inability to discern the directive motive behind Stoker's work. He also wanted to expose several fatal procedural blunders made by Malan in his thesis. Nevertheless, Hart (1971:120) finally had to admit that Malan did at least succeed in highlighting several potential problems in Stoker's philosophy. He states it as follows:

In spite of Malan's failure to really confront Stoker with an impressive critical assault, he *has* demonstrated that there are a number of basic problems in Stoker. He may even have shown that the probable origin of these problems lies in sources close to an ontologically dualistic kind of synthesis thinking. If so, Malan owes us an analysis of at least one aspect of this problem. (Hart, 1971:120)

One such basic problem in need of analysis is Stoker's view of the place and role of theology in respect to philosophy, especially as it relates to the elaboration of a distinctively Christian philosophy. Initially, he characterised theology as 'the queen of all other sciences'⁵ (Stoker, 1940:9). In an attempt to address the concerns of his critics, particularly those of Malan, he later replaced this phrase with 'the first among equals'⁶, adding that the former expression has often been misunderstood (Stoker, 1970:425). The new phrase may prove to be no less objectionable, however. In what sense exactly is theology meant to be first, and in what sense merely equal? According to Stoker, all the sciences are equal in that one science may not rule over, or dictate to, the others. All interchange between the sciences should occur on a voluntary basis. Theology is first in the sense that it deals with the 'highest and deepest problems'. In another place, he calls knowledge of God and God's relation to all things 'the ultimate biblical truths' (Stoker, 1971:37). According to him, it is due to the fact that Cornelius van Til started with these truths that his theory of knowledge obtained the 'depth' and 'height' that it did. Theology is thus first among the sciences because it deals with truths of a higher or more ultimate nature than the 'cosmic sciences'.

⁵ The Latin phrase often used is *regina scientiarum*.

⁶ The Latin phrase often used is *primus inter pares*.

This makes it doubtful whether Stoker, in his response to Malan, succeeded in demonstrating a clean break from scholastic thought. Stoker's rejection of an autocratic view of theology can be appreciated. Similarly, his emphasis on (voluntary) inter-disciplinary cooperation is commendable (Coletto, 2012:84). That he also successfully refuted Malan's claim that his views about theology presuppose or imply the religious neutrality of other disciplines should also be conceded.⁷ But the replacement of the phrase 'queen of the sciences' with 'the first among equals' does not seem to achieve much. It was exactly the kind of truths that theology was about, namely metaphysical knowledge of god (*theos* = 'god', *logos* = 'study'), that led Aristotle to call theology the 'guiding and most estimable science' (Dooyeweerd, 1960:116). Likewise, Thomas Aquinas gave theology the right to reign as 'queen' exactly because he thought that the competence to deal with the higher order of reality belongs to it (Spykman, 1992:16).

Moreover, in the Roman Catholic tradition, the expression 'the first among equals' is closely linked to the special status of being a mediator. As Coletto (2012:83) explains, it refers to the role that the Roman pontifex (i.e. the chief bishop or the Pope) has amongst the other bishops, with 'pontifex' etymologically meaning 'builder of bridges' or mediator. In this regard, it is interesting to note that Stoker made the scientific study of Scriptures the prerogative of the theologian. As Stoker (1947:78) himself stated, 'for the use of Scriptural truths, the non-theologian will be dependent on the collaboration of the theologian'. It is thus only through the theologian that the non-theologian has scientific access to Scriptures. Malan's (1968:92–105, 246) contention that Stoker envisioned theology to function as some kind of mediator between the Word revelation of God and philosophy is therefore significant.

From the above it becomes apparent that further analysis is needed. Although Malan's critique points towards certain potential problems in Stoker's philosophy, his treatment of such problems is not satisfactory. And although the replies of Hart and Stoker show the shortcomings of Malan's thesis, they still do not clarify the troubling features in Stoker's philosophy in a satisfactory way. Without further analysis the issue will remain opaque and an accurate and fair evaluation of Stoker's contributions will be difficult to achieve. Of special interest for us is an evaluation of the contributions he made in the field of methodology.

⁷ It is abundantly clear that Stoker rejected the possibility of neutrality in science due to the influence he believed pre-scientific knowledge, religious ground motives, life and worldview, etc. have on science (see Stoker, 1970:420–425).

What appears to be a lack of prudence regarding the theology-based approach might have implications for an accurate evaluation of Stoker's contributions in methodology.⁸ Is this lack of prudence in some way replicated in his methodology? The fact that Stoker does seem to neglect the artefactual⁹ nature of methods, thereby making himself vulnerable to the endorsement of questionable methods, may suggest that possibility. His acceptance of the phenomenological method, later called the 'diaphanerotic method' (see Stoker, 1970:334), for example, may point towards such an interpretation. Indeed, this has been one of the reasons why Malan (1968:334), whether correctly or not, has characterised Stoker as a synthesis thinker with a phenomenological bend.

A more nuanced understanding of Stoker's approach towards a distinctive Christian philosophy is needed to enable an evaluation of his methodology that is not only accurate, but also fair. The basic problems perceived to be present in Stoker's philosophy do seem to cast a shadow over his methodology as well. This is unfortunate! A deepened understanding of Stoker's approach may be helpful, therefore, in opening up Stoker's positive contributions for wider appreciation.

In the light of the above considerations, it is not surprising that the need for a thorough evaluation of Stoker's philosophy was expressed during one of the sessions of a recent conference organised by the Association for Reformational Philosophy.¹⁰ Considering the scope of this study, a comprehensive evaluation of every aspect of Stoker's philosophy would be too ambitious. The focus of this study should thus be limited to the two areas highlighted above: Stoker's approach and methodology. More specifically, the focus will be directed first at the general method or approach¹¹ that he endorsed for the development of an integral Christian

⁸ Coletto (2009:292) calls those approaches which regard theology as the key-factor for the development of Christian scholarship 'theology-based' approaches.

⁹ 'Artefactual' here refers to scientific methods being artefacts, in other words being products of human culture formation.

¹⁰ More specifically, it was during the international conference on the occasion of the 75th anniversary of the Association for Reformational Philosophy with the title 'The future of creation order', held at the Free University of Amsterdam, from 16 to 19 August 2011.

¹¹ According to the *Reader's Digest Oxford Complete Wordfinder* (1993:66, 959), 'approach' means 'come near or nearer to' and is also a synonym of 'method'. However, the respective meanings of 'method' and 'approach' do not coincide completely, making 'approach' suitable for situations where different senses of method are intended and different words are needed to prevent confusion. Such slight differentiations in respective meanings are strictly relative and context bound, however. 'Method', for instance, can be used for a greater degree of detail in the specification of steps in comparison to 'approach'. By contrast, 'approach' can also be used for possible variations allowed in the steps of one and the same method.

philosophy. Second, in light of this evaluation, Stoker's contributions to the philosophical foundations of scientific methods will also be considered.

Problem statement

Concerning the pioneering of an integral Christian philosophy, what are H.G. Stoker's approach and methodological contributions?

The problem statement can be subdivided into the following two questions:

- i) What approach did Stoker employ in pioneering an integral Christian philosophy and how should it be evaluated?
- ii) What can we learn from Stoker's contributions in methodology and where should we consider taking a different route?

Central theoretical stance

Stoker adopted a slightly modified theology-based approach which, to some extent, hindered his pursuit of an integral Christian philosophy. An insufficiently critical attitude towards ideas with non-Christian roots not only emerges in his acceptance of this approach, but lies also behind some influences of two rationalist traditions in his methodology. With the condition that certain systematic distinctions and concepts be reconsidered, Stoker nevertheless did sketch some key features that are appropriate for a reformational methodology.

Leading theoretical arguments

- i) It is argued that the Calvinist philosopher, Hendrik Gerhardus Stoker (1899–1993), adopted a qualified theology-based approach for the elaboration of his Christian philosophy. Being shaped by the nature–super-nature theme, which itself is a method of synthesis, this approach lends itself towards establishing pseudo congruency. In Stoker's case, it is an attempt to reconcile his commitment to an integral Christian philosophy with his antecedent allegiance to reformed theology in its orthodox scholastic expression. Indeed, Stoker has gone further than his reformed predecessors in an effort to develop a Calvinist philosophy. But, instead of piecemeal adjustments, it is proposed that the theology-based approach should be rejected in its entirety if integral Christian scholarship is to flourish.

ii) Stoker's early exposure to a milieu characterised by a preoccupation with methodology should serve as a backdrop for an appreciation of his theoretical work on methods. It is argued that his work resulted in a methodological perspective that underscores the limited role of method as merely a means to an end. It is a perspective that acknowledges the multiplicity and complementarity of methods, undermines the myth that the method of inductive verification is *the* scientific method and, in conjunction with that, rejects methodological monism and scientism. However, the influence of natural scientific and metaphysical rationalism on Stoker manifests itself in his definition of science and of scientific method. Although his intention to disclose the normative dimension of method is welcomed, it is questioned whether the introduction of a family of deontological sciences, including a deontology of methods, would really promote this cause. Finally, a modal analysis of methods as historically qualified artefacts is proposed as an alternative to Stoker's analysis that is more inclined towards objectivism. In this way it is hoped that modal norms for methods can be more accurately identified, and that sufficient emphasis can be placed on norms holding also for the design of methods.

Objectives

The aim of the research is to achieve the following objectives:

- i) Regarding Stoker's approach towards pioneering an integral Christian philosophy
 - The theology-based approach adopted by Stoker for the elaboration of a Christian philosophy, especially in its uniquely adjusted form, is to be made explicit. This will be done by analysing the strategy he proposed, as well as certain relevant aspects of his philosophy (e.g. his encyclopaedia of the sciences and his ontology).
 - Based on arguments in existing literature, a critique of the theology-based approach will be presented and related to the uniqueness of Stoker's philosophy.
 - Some of the anomalies in Stoker's philosophy, such as traces of the nature-grace scheme, will be made intelligible by means of an identification and critique of his approach.

ii) Regarding Stoker's methodology or theory of methods

- The methodological traditions to which Stoker was exposed to, needs to be investigated as a backdrop against which his methodological contributions can be appreciated.
- Stoker's theory of methods will be explored with the aim of determining its value for reformational philosophy, especially as this philosophy embraces a non-reductionist ontology and opposes methodological scientism.¹²
- Stoker's understanding of the normative dimension of methods and of the artefactual nature of methods are to be examined.

Outline of the dissertation

The dissertation is in an article format according to the General Academic Rules of the North-West University. This introductory section is followed by two articles in which the two sub-questions and corresponding objectives stated above are addressed. A subsequent conclusion forms the final section of the dissertation. The outline is thus as follows:

Introduction

Article 1: Critical reflections on H.G. Stoker's (1899–1993) approach towards pioneering an integral Christian philosophy

Article 2: An exploration of H.G. Stoker's (1899–1993) contributions to methodology

Conclusion

Method

The present study is in the form of an analysis of the philosophical literature pertinent to the topic.

¹² Methodological scientism occurs where the legitimate designation of a method as 'scientific' (in contrast to it being 'un-scientific' or 'pseudo-scientific') is restricted to the methods of the natural sciences, as well as to those that are extensions of them and applied in the social sciences. In other words, methodological scientism refers to the reduction of scientific methods to natural scientific methods (See Von Hayek, 1955:13–17).

The development in Stoker's thought and the possibilities of alterations or shifts are important considerations. To this end, a comparative analysis is made of his writings on certain key issues at different times of his life.

In addition to the general methods of analysis and comparison, immanent critique will be employed where appropriate.

Area of study

The area of study is philosophy, with both a historical and systematic component. The project also includes necessary excursions into theology and philosophical methodology.

Contribution

The intended contribution of this study is first to clarify certain facets of Stoker's philosophy that have caused some perplexities within the community of reformational philosophers. These facets relate to the perceived influence of scholasticism and/or phenomenology, the ascertainment of which has up to now not reached much agreement.

In the second place, the study also tries to bring attention to the value of Stoker's work within the field of philosophical methodology. Apart from a few exceptions, it has up to now not received the acknowledgement it deserves.

Lastly, the study wants to re-emphasise something which the founders of reformational philosophy understood very well, namely the importance of maintaining an anti-synthetic (not antithetical) attitude for the continued vitality of reformational philosophy.

References

- Blackburn, S., 2005, *Oxford dictionary of philosophy, 2nd edn*, Oxford University Press, Oxford.
- Caws, P., 1967, 'Scientific method', in *The encyclopedia of philosophy*, vol. 7, MacMillan Publishing & The Free Press, New York.
- Coletto, R., 2009, 'Strategies towards a reformation of the theology-based approach to Christian scholarship', *In die Skriflig/In Luce Verbi*, 43(2), 291–313.
- Coletto, R., 2012, 'Encyclopaedic models in the Kuyperian tradition (part 1: the "fathers")', *Journal for Christian Scholarship*, 48(1&2), 69–89.
- Dooyeweerd, H., 1957, *A new critique of theoretical thought*, vol. 3, Presbyterian and Reformed Publishing Company, Philadelphia.
- Dooyeweerd, H., 1960, *In the twilight of Western thought: studies in the pretended autonomy of philosophical thought*, The Presbyterian and Reformed Publishing Company, Philadelphia.
- Dooyeweerd, H., 1979, *Roots of Western culture: pagan, secular and Christian options*, Wedge, Toronto.
- Hart, H., 1971, 'Malan's critical study', in *Truth and reality: philosophical perspectives on reality dedicated to professor Dr. H.G. Stoker*, De Jong's Bookshop, Braamfontein, pp. 109–121.
- Heyns, J.A., 1994, 'Die betekenis van H.G. Stoker se filosofie vir die teologie', *Koers – Bulletin vir Christelike Wetenskap*, 59(3&4), 455–471.
- Heidegger, M., 1967, *Being and time*, Transl. J. Macquarrie and E. Robinson, Basil Blackwell, Oxford.
- Malan, D.J., 1968, *'n Kritiese studie van die wysbegeerte van H.G. Stoker vanuit die standpunt van H. Dooyeweerd*, PhD Proefschrift, Vrije Universiteit te Amsterdam, Buijten & Schipperheijn, Amsterdam.
- Reader's Digest Oxford Complete Wordfinder, 1993, Reader's Digest, London.
- Schulze, L.F., 1994, 'Aspekte van Stoker se kritiek op die Wysbegeerte van die Wetsidee', *Koers – Bulletin vir Christelike Wetenskap*, 59(3&4), 473–490.
- Spykman, G.J., 1985, *Spectacles: biblical perspectives on Christian scholarship*, PU for CHE, Potchefstroom.
- Stellingwerff, J., 2006, *Geschiedenis van de reformatorische wijsbegeerte: een Christelijke perspectief*, Stichting voor reformatorische wijsbegeerte, Amersfoort.

- Stoker, H.G., 1925, 'Das gewissen: erscheinungsformen und theorien', Verlag von Friederich Cohen, Bonn, in M. Scheler, (ed.), *Schriften zur philosophie und soziologie*, 2.
- Stoker, H.G., 1947, 'Calvinistiese Wysbegeerte', *Standpunte – onafhanklike Kwartaalblad vir Literatuur en Kuns*, 2(3), 68–78.
- Stoker, H.G., 1961, *Beginsels en metodes in die wetenskap*. Pro Rege, Potchefstroom.
- Stoker, H.G., 1970, *Oorsprong en rigting, band 2*, Tafelberg Uitgewers, Kaapstad.
- Stoker, H.G., 1971, 'Reconnoitering the theory of knowledge of Prof. Dr. Cornelius van Til', in E.R. Geehan, (ed.), *Jerusalem and Athens: critical discussions on the theology and apologetics of Cornelius van Til*, pp. 25–71, Presbyterian and Reformed Publishing Company, Philadelphia.
- Stoker, H.G., 1982, 'Stoker se antwoord op Malan se kritiek op sy kosmologie', mondelingse antwoorde op vrae deur Henk (H.G. Stoker Jnr), getranskribeer vanaf opame nr. 29, gedateer 13 Februarie 1982, in *Uit, deur en tot God is alle dinge: werke van Prof. Dr. H.G. Stoker*, CD, Vereniging vir Christelike Hoër Onderwys, Bloemfontein.
- Stoker, H.G. Jnr., 1983, *Die vraagstuk van deontologie in die filosofie van HG Stoker*, MA Verhandeling, Fakulteit Lettere en Wysbegeerte, PU vir CHO, Potchefstroom.
- Stoker, P.H., 2008, 'Wat is tyd?', *Tydskrif vir Christelike Wetenskap*, 44(3&4), 89–113.
- Taljaard, J.A.L., 1976, *Polished lenses: a philosophy that proclaims the sovereignty of God over creation and also over every aspect of human activity*, Pro Rege, Potchefstroom.
- Troost, A., 1958, *Casuïstiek en situasie-ethiek*, Drukkerij Libertas, Utrecht.
- Van der Merwe, N.T., 1993, 'In memoriam: Prof. Dr. H.G. Stoker (4/4/1899–16/5/1993)', *Philosophia Reformata*, 58(2):95-97.
- Van der Walt, B.J., 2007, 'Ad fontes: eerste boustene vir 'n geskiedenis van die reformatoriese filosofie – ook in Suid-Afrika', *Tydskrif vir Christelike Wetenskap*, 43(3&4), 217–234.
- Venter, J.J., 1981, *Geloofsgebonde denke by Anselmus: 'n studie van sy wysgerige metode*, PhD Proefskrif, Fakulteit Lettere en Wysbegeerte, PU vir CHO, Potchefstroom.
- Vollenhoven, D.H.Th., 2005, *Isagôgè philosophiae / Introduction to philosophy*, A. Tol & J.H. Kok (eds.), Transl. J.H. Kok, Dordt College Press, Sioux Centre.
- Vollenhoven, D.H.Th., 2011, *Gastcolleges wijsbegeerte: erfenis voor het heden*, in K.A. Bril, & R.A. Nijhoff (eds.), De Zaak Haes, Amstelveen.

Von Hayek, F.A., 1955, *The counter-revolution of science: studies on the abuse of reason*, The Free Press of Glencoe, Glencoe.

ARTICLE 1:

Critical reflections on H.G. Stoker's (1899–1993) approach towards the elaboration of a Christian philosophy

Abstract

In this article I argue that the Calvinist philosopher, Hendrik Gerhardus Stoker (1899–1993), adopted a qualified theology-based approach for the elaboration of his Christian philosophy. Being shaped by the nature–super-nature theme, which itself is a method of synthesis, this approach lends itself towards establishing pseudo congruency. In Stoker's case, it is an attempt to reconcile his commitment to an integral Christian philosophy with his antecedent allegiance to reformed theology in its orthodox scholastic expression. Indeed, Stoker has gone further than his reformed predecessors in an effort to develop a Calvinist philosophy. But, instead of piecemeal adjustments, it is proposed that the theology-based approach should be rejected in its entirety if integral Christian scholarship is to flourish.

Introduction

The South African philosopher, Hendrik Gerhardus Stoker, has been widely acknowledged as a formidable thinker inside and beyond the borders of South Africa. At the same time, his ideas seem to have had a mixed and often confusing reception within Calvinist circles. The controversy surrounding certain features of his philosophy reached new peaks with Malan's (1968) doctoral thesis levelling substantial criticisms against them, Stoker (1970:411–433) firmly denying the validity of the said criticism and Hart (1971) coming to Stoker's defence.

These discussions did not settle the main issues satisfactorily. While serious shortcomings in Malan's evaluation were revealed, Hart (1971:120) admitted that there are indeed a number of basic problems in Stoker's philosophy that require further analysis. One such basic problem is signalled by the title with which Stoker originally designated theology, viz. 'queen of the sciences'. This title is associated with a certain cluster of scholastic conceptions that either precludes the possibility of a Christian philosophy, or tries to recover such possibility by somehow linking philosophy to theology. Both seem incompatible with the idea of an integral Christian philosophy.

The main question of this article deals precisely with these problems: What approach did Stoker employ in pioneering an integral Christian philosophy and how should it be evaluated? My hypothesis is that Stoker employed a slightly modified theology-based approach and that this approach to some extent hindered his pursuit of an integral Christian philosophy. I hope that an analysis of this question will help reformational philosophers, as well as other interested scholars, make better sense of the presence of certain problematic conceptions within Stoker's philosophy. I also hope it will serve as a case in point for the importance that maintaining an anti-synthetic attitude has for the vitality of reformational philosophy.

After sketching the historical circumstances and the particular current of Calvinist thought with which Stoker identified, his encyclopaedia of the sciences will be discussed with the purpose of displaying his theology-based approach. As well as the occasional critical remark throughout the discussion, a few reasons will also be provided for why the approach should rather not be emulated by those striving for an integral Christian philosophy.

Historical background

H.G. Stoker (1899–1993) can rightfully be said to be one of the pioneers endeavouring for the realisation of an integral Christian philosophy. The philosophical tradition that emerged from such efforts is generally known today as reformational philosophy. Characterising Stoker as a pioneer within this tradition is quite suited. To be sure, he was not the sole pioneer, but neither was his work simply an import product from the philosophical pioneering done by Vollenhoven (1892–1978) and Dooyeweerd (1894–1977) (cf. Van der Walt, 2007:220) in the Netherlands.

Stoker was neither a student nor a follower of either Vollenhoven or Dooyeweerd. Vollenhoven was still a pastor in The Hague when Buytendijk referred Stoker to the German phenomenologist Max Scheler for his doctoral studies. This came after the death of Herman Bavinck, the renowned reformed theologian under whom Stoker originally intended to study (Raath, 1994:347). Moreover, Stoker was appointed at the Potchefstroom University College in 1925, one year before Vollenhoven and Dooyeweerd accepted their academic chairs at the Free University of Amsterdam. Stoker (1927) also published a series of eight short articles contemplating the principles that should be foundational to a future 'theistic philosophy' only two

years after his appointment.¹ It is thus from the very beginning of his career that he aspired to set forth the outlines of a philosophy that would be Christian. During this period Vollenhoven and Dooyeweerd were busy finding their feet within their own brand of reformational philosophy.

The independent development of a Christian philosophy in South Africa by Stoker does not imply the absence of ties with his Dutch peers in Amsterdam. He rather carved out his own views in relation to those of Dooyeweerd and Vollenhoven, sometimes opposing and at other times concurring with their views. Compare, for example, his monograph 'The new philosophy at the Free University (Amsterdam)'² and the series of eight articles with the main title 'Fragments from the philosophy of the law-idea'.³ Moreover, all three pioneers shared deep roots in Dutch Calvinism.

The type of Calvinism which inspired Stoker already from a young age had a peculiar flavour due to its South African context, but it originated from, and retained connections with, Dutch Calvinism. In South Africa, as in the Netherlands, the principles of Calvinism had not really been elaborated in philosophy. The reformers of the earlier generation, particularly Abraham Kuyper and Herman Bavinck, pointed in such a direction.⁴ However, the implementation of the principles of Calvinism in the field of philosophy would only commence with the pioneers of reformational philosophy (cf. Van der Walt, 2013:6). Before these three thinkers a truly integral Christian philosophy did not exist (Dooyeweerd, 1939:198).

Two currents of Calvinist thought

Given the lack of a Calvinist tradition within philosophical thought to fall back on, the pioneers of reformational philosophy did seek intellectual nourishment from the major figures in reformed theology. Two more or less distinguishable currents of Calvinist thought sprang forth. In this regard Stoker (1970:218–219) associated himself with the current inaugurated by H. Bavinck and listed the following persons in connection with it: V. Hepp, J. Woltjer, W. Geesinck, P. Prins, H. Steen, C. Jaarsma

¹ Compare also the alternate title of one of his lectures of 1932, viz. 'The philosophy of the creation idea or the foundational principles of a Calvinistic philosophy' (see Stoker, 1933a).

² The title in Afrikaans reads 'Die nuwere wysbegeerte aan die Vrije Universiteit (Amsterdam)' (see Stoker, 1933b).

³ The main title of the series in Afrikaans is 'Greppe uit die wysbegeerte van die wetsidee' (see Stoker, 1937b–d, 1938a–c, 1939; 1941a).

⁴ Van der Stelt (2012) notes that Bavinck's interest broadened after the publication of his famous four volumes 'Gereformeerde Dogmatiek' ('Reformed Dogmatics') to various non-theological fields, including philosophy. According to Van der Stelt, Bavinck 'pressed for constant renewal and a broad understanding of Christian discipleship.'

and F.J.M. Potgieter.⁵ As observed by Stoker, most of these were theologians. Stoker associated the other current of Calvinist thought with Dooyeweerd's philosophy of the law-idea. The names mentioned by Stoker also included D.H.Th. Vollenhoven, S.U. Zuidema, J.P.A. Mekkes, K.J. Popma and H. van Riessen.

For Stoker, finding intellectual nourishment from his predecessors in the reformed theological tradition meant especially exploring the implications of some of Bavinck's conceptions. These include, among others, an ontology that has as its main starting point a distinction between God and the cosmos, the idea that creation itself is revealed to the knower and a certain view regarding the fields of theology and philosophy (Stoker, 1970:332; Van der Walt, 2013:7). These ideas did not challenge the traditional circumscription of theology's field of study as denoted by its etymology (*theos* + *logos* = study of god, or 'heilige godgeleerdheid' in Afrikaans).

Dooyeweerd, in turn, found inspiration in what he regarded as Kuyper's innovative ideas that pointed towards new avenues. These include, among others, an understanding of God's creational sovereignty that comes to expression in distinct law-spheres, the heart as the religious centre of human existence and the acknowledgement of faith as a boundary function. It is the latter acknowledgement, according to Dooyeweerd (1939:229–230; 1958:12), that led to a proper distinction between theology and philosophy and to a departure from the reformed scholastic view of theology.

There is a significant difference between elaborating the conceptions of one's predecessors (as Stoker did) and deriving inspiration from them (cf. Dooyeweerd's approach). The claim that one current of Calvinist thought expanded the ideas of Bavinck and the other those of Kuyper would, therefore, not be fully correct. In contrast to Stoker, who saw his work as more or less a continuation of Bavinck's contribution to reformed dogmatics, Dooyeweerd (1939) was much more discriminative towards the heritage left by Kuyper. He regarded only some of the creative ideas emerging from Kuyper's work as reflecting the true spirit of Calvinism, while viewing the remaining cluster of concepts, for example those built around the logos theory, as being at odds with it.⁶

⁵ To these could be added the South Africans S.P. Van der Walt (1953), J.A. Heyns (1994) and E.J.G. Norval (1950).

⁶ Vollenhoven, for his part, challenged reformed scholasticism by rejecting, for example, the idea of the immortal substantial soul. According to Tol (2011:203) this also means that 'the Self is no longer the prime pole of thought over against the being of the world'. This challenge, which was met with severe opposition from V. Hepp and other reformed theologians, was first initiated by Antheunis Janse, a school principal and friend of Vollenhoven.

Stoker and Dooyeweerd, therefore, had diverging attitudes towards the philosophical ideas of their Calvinist predecessors in theology. Stoker remained much closer to the reformed theologians of the earlier generation and of his own time. Dooyeweerd, together with Vollenhoven, saw some of these very same ideas and theories with which Stoker aligned himself, as serious obstacles to the possibility of developing a philosophy with an integral Christian character. Stellingwerff (2006:25; 35) accordingly describes the beginning of reformational philosophy at the Free University of Amsterdam as a continuous liberation from scholastic remnants in reformed thought. The presence of these remnants should be attributed to the influence of Aristotelian-Thomistic categories, themes and concepts on the successors of John Calvin.

Encyclopaedia and the theology-based approach

How can Christian scholars ensure that the philosophy they aim to develop will have a genuine Christian character? What is it that makes a philosophy Christian? These are questions about the religious direction of a particular philosophy. Those who opt for some or other version of the theology-based approach tackle this issue by appealing to the science of theology. More specifically, theology is regarded as the key factor for the development of Christian scholarship (Coletto, 2009a:292), including that of a Christian philosophy.

As will be argued later, an approach that makes theology the key factor for the development of a Christian philosophy is also found in Stoker. In his philosophy we are confronted by questions regarding the encyclopaedia of the sciences that deserve theoretical reflection in their own right. The fact that Stoker (1961:237–247; 1971:39–44) developed his concern for the relationship between theology, philosophy and the special sciences into a refined and comprehensive encyclopaedia of the sciences is to his credit. For Stoker, however, encyclopaedic issues have an additional relevance due to the envisioned place and role of theology in Christian scholarship. The rationale here is clear: if theology is considered a key factor for Christian scholarship in general, clarifying the relations of the non-theological sciences to theology becomes paramount for the Christian character of those sciences.

Stoker's encyclopaedia of the sciences

As already mentioned, the distinction and relationships between theology, philosophy and all the other sciences were of great importance for Stoker

throughout his career. This is reflected in a series of publications⁷ that span at least the period from the early 1930s up to the early 1970s. In many of these discussions it is apparent that the demarcation between theology and philosophy served as a point of orientation, or as the backdrop upon which the philosophical analysis of the relevant subject was to proceed. As Stoker (2007:chap 1, par 2) once expressed it: ‘a background or grounding that codetermines and guides the analysis.’

How then did Stoker go about distinguishing between theology, philosophy and the special sciences? How did he define the field and task of these sciences? An answer to these questions must be historically sensitive, especially as Stoker’s formulations, being dispersed over multiple publications throughout his career, were rarely identical. Apart from superficial differences in wording, some development did take place in terms of refinement, elaboration and an increase in sophistication. Notwithstanding these differences and changes, a basic underlying scheme remained constant.

The basic form of Stoker’s (1961:241) scheme follows a primary and a secondary distinction regarding the knowable. The primary distinction is between God and cosmos⁸, while the secondary distinction relates to the cosmos itself, viz. the distinction between the totality of the cosmos and the diversity within the cosmos. Following the primary distinction, theology is a science of God who is trans-cosmic, while all the other sciences are cosmic sciences, in the sense that they are limited to the cosmos in their task and field. Following the secondary distinction, philosophy is the science that deals with the cosmos as a whole, while each of the special sciences is concerned with some or other unique group of phenomena within the cosmos (see figure 1).

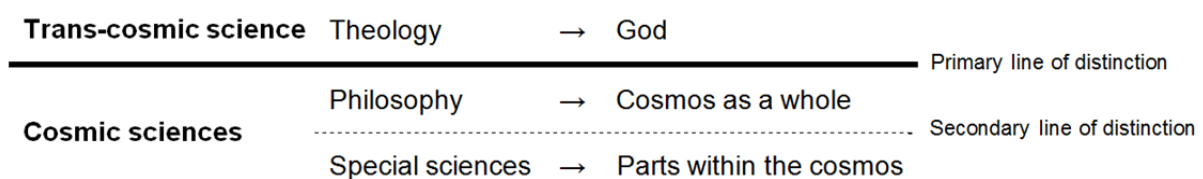


FIGURE 1: Stoker’s encyclopaedia in rudimentary form

Of course, the above description does not represent Stoker’s encyclopaedic views in all their refinements and intricacies. For example, Stoker did not claim that theology directly investigates God as, say, a geologist would investigate a rock. Theology’s

⁷ Included are at least the following publications: Stoker, 1933a–c, 1935, 1937a–b, 1940a–c, 1941b, 1947, 1951, 1952, 1961, 1962 and 1971.

⁸ Stoker used the word ‘cosmos’ as a synonym for ‘creation’.

knowledge of God is rather mediated through revelation. Stoker (1940c:307) often stated that theology is 'the science of the revealed truths of God'. Furthermore, Stoker (1935:20) included within his encyclopaedic concerns relations of coherence among the relata identified with the primary and secondary distinctions. These relations of coherence were also developed into perspectival directions⁹ and constituted an additional means according to which the various sciences ought to be distinguished (Stoker, 1940b:104–105). (See the discussion immediately preceding figure 4 below where the issue of perspectival directions emerges again.)

A last example of the refinements that Stoker (1971:38–44; 1981) implemented in his encyclopaedia of the sciences is his distinction between individual, transversal and intermediary sciences. Individual sciences include theology, philosophy and each of the special sciences. Transversal sciences are scientific disciplines that deal with those questions that the individual sciences have in common. Transversal sciences therefore transect or transverse all the individual sciences.¹⁰ As the name suggests, intermediary sciences are, in a sense, positioned in between two individual sciences. Biochemistry and chemical biology, for instance, are two intermediary sciences situated between chemistry and biology.

A qualified theology-based approach

Coming back to Stoker's theology-based approach to the development of a Christian philosophy, the following four points should be noted.

First, in Stoker's encyclopaedic scheme there is a stronger association between theology and the Bible as a source of knowledge than there is between the cosmic sciences and the Bible. For instance, Stoker (1933c:27; 1940c:298) stated that the Bible is the given source of knowledge for theology, and that it is primarily for theology. The reason for this may possibly lie in the trans-cosmic concerns of theology and the consequent need for a revelation. In other words, whereas philosophy and the special sciences have direct access to the cosmos (Stoker, 1940a:10), theology must

⁹ 'Perspectival direction' is used here as the English equivalent of Stoker's Afrikaans neologism 'blikkrioting' ('gaze' + 'direction'). Stoker was not original in employing 'direction' as an additional means of demarcation. According to Van der Walt (1968:125, 251, 258, 262, 273, 279) this is in line with a long tradition of reformed theological thought, and is also found with Thomas Aquinas.

¹⁰ According to Stoker (1971:41), every scientific discipline has a concern with, and contributes to, the delimitation of its own field of research relative to the domains of all the other disciplines. All neighbours have a say in determining boundary lines. What he calls the 'theory of science' or 'Wissenschaftslehre' is therefore an example of a transversal science. Stoker (1971:38) also uses the name 'inter-sciences' for 'transversal sciences'. A critical question is whether the acceptance of transversal sciences still allows philosophy a domain of its own, especially where philosophy is characterised as having some sort of totality perspective regarding the cosmos.

appeal to the Bible as an intra-cosmic revelation from and about a trans-cosmic reality.

The stronger association between theology and the Bible may lead one to infer a straightforward dualism between God, the Bible and theology on the one hand, and the cosmos, general revelation and the cosmic sciences on the other. This would, however, be a simplistic interpretation of Stoker's views. In the first place, Stoker (1971:39) held that

the distinction between *theology* and *philosophy* does not (...) coincide with that between the revelation of God in his *Word* on the one hand and the *cosmos* (...) on the other.

According to him all the sciences, including theology, deal with the cosmos. This is due to the postulated coherences between the three related existents, namely God, the cosmic totality and the cosmic diversity, as well as the three correlated 'perspectival directions' (Stoker, 1961:240-244). In the second place, he believed that from a Christian perspective the Bible is a legitimate source of knowledge for all scientific disciplines.¹¹

If the two reasons just mentioned above are legitimate, shouldn't a privileged relation between theology and the Bible then be simply abandoned? More importantly, would full access to Scriptures for all disciplines not be beneficial to the project of Christian scholarship? What would have been, in my view, the natural next step towards a more integral Christian approach, was precluded when Stoker (1940a:11; 1947:78; 1967:225) drew on the commonly held view that competence in Bible exegesis belongs solely to theologians. Besides, methodological expertise is historically contingent, i.e. malleable. A discipline's direct access to one of its acknowledged sources ought therefore not to be ruled out on the grounds that its practitioners currently lack the necessary methodological competencies. The task of a discipline, together with its sources of knowledge, should rather determine which methodological competencies are to be honed by the scholars working in that scientific domain.

Second, in Stoker's scheme theology is placed in an intermediary position between the Bible and the cosmic sciences. This is a consequence of Stoker's view that only theologians are competent to provide scientific expositions of the Bible. Stoker

¹¹ Stoker (1940c:298) expressed it as follows: 'The former [i.e. Christian scholarship] acknowledges the Bible as a necessary source of knowledge for all sciences, the latter [i.e. non-Christian scholarship] does not.' Compare also Stoker (1940b:103).

(1940c:303) explained that the Bible contains information that needs to be processed scientifically by means of exegesis and other supplementary methods before it can be used scientifically. Because exegesis is the expertise of theology, the non-theological scientist may not appeal to the Bible directly. Where non-theologians want to make use of biblical information scientifically, they must borrow it from the theologian. Although this does not preclude Bible-believing philosophers and special scientists from being influenced by their pre-scientific knowledge of the Bible (Stoker, 1940b:103; 1970:420–425), such knowledge cannot be used scientifically without the mediation of the theologian. This places theology as a mediator between philosophy and the Bible.

Third, reformed theology is regarded by Stoker as foundational to a Calvinist philosophy. According to Stoker (1947:70–73; 75–76), questions regarding God and the relation between God and the cosmos ought to be addressed by theology. Theology's answers to these questions in turn form the religious apriori of philosophy. These religious apriori function as the ground idea on which a Calvinist philosophy is to be based. Stoker (1951:45) also called them 'regulative principles', thereby indicating their regulating function in philosophical investigations of the cosmos. Moreover, according to Stoker (1970:225), they 'fundamentally and in mainlines co-determine the construction of A Calvinist philosophy'.

Some examples of religious apriori that Stoker (1941c:54) mentioned belonging to the field of theology include the trans-cosmic origin, self-insufficiency, the creaturely status and the law-boundedness of the cosmos, as well as the idea that there is a cohering diversity within the cosmos. Even the question of who God is should be answered by the theologian (Stoker, 1940b:108). It should however be pointed out, together with Strauss (1969:35), that these are not theological doctrines, but simply religiously determined faith convictions of a pre-scientific nature.

Fourth, theology is placed in an elevated position with regards to all the other sciences. This seems to be an unavoidable consequence of the trans-cosmic nature of what it investigates. As Stoker (1940a:10) stated, theology investigates the revealed truths of God. Seeing that these truths are about something which is not a cosmic reality, the investigation of it cannot be the task of a special science ('vakwetenskap'). Being revealed truths of God they are not a part or a section ('vak') of the cosmos. In Stoker's scheme, theology must be nobler than all the other sciences, because it deals with truths of a higher or more ultimate nature. Whether it

is called the 'queen of the sciences'¹² or, more tactfully, the 'first among equals'¹³ (cf. Stoker, 1970:425; 1971:39), does not matter much. Theology retains an elevated position in comparison to the other sciences!

By framing the second and third points above as encyclopaedic issues, Stoker (1970:420-425) tried to present the intermediary and foundational role of theology as merely a matter of interdependence and cooperation between the sciences.¹⁴ He explains that there are two different sets of problems that should not be confused: first, the set of problems regarding the 'vertical' relation between pre-scientific and scientific knowledge and second, the set of problems regarding the 'horizontal' relation between the sciences themselves.

So, argued Stoker, when Malan (1968) criticised him for supposedly wanting to Christianise philosophy via its required connections to theology, Malan only considered what he (Stoker) had said about the horizontal relation between theology and the other sciences. According to Stoker, Malan should also have considered what he had said about the vertical relation between pre-scientific and scientific knowledge. If Malan had, he would have seen that 'religious faith' (which is pre-scientific) is the *dunamis* of scholarship according to Stoker's view. Stoker (1970:425) thus emphatically denied having an approach according to which Christian philosophy is founded on theology.¹⁵

In this way, Stoker portrayed the relation between theology and the other sciences as being situated on one and the same horizontal plane, viz. the plane of the sciences. In order to further soften the centrality of theology in his encyclopaedia, Stoker (1970:422; 425) also remarked that it is not only philosophy and the special sciences that depend on theology, but that all these sciences are interdependent. Furthermore, he argued that the cooperation between the sciences must be free and voluntary: 'The one may not rule over, dictate or prescribe to the others.' Nevertheless, close attention should be paid to what Stoker's views really amount to.

¹² The well-known Latin phrase is *regina scientiarum*.

¹³ The well-known Latin phrase is *primus inter pares*.

¹⁴ Compare also Schutte's (1972:315) attempt to address this problem regarding Stoker's approach to Christian scholarship in the same vein.

¹⁵ Notwithstanding this denial, it should be noted that Stoker explicitly stated that it is by means of borrowing from theology that non-theological disciplines obtain their Christian character. In Stoker's (1952:126) own words: 'The Holy Scriptures reveal (...) fundamental principles (...), principles which all the non-theological sciences should borrow from theology and should use as religious guiding principles in their respective domains, the borrowing and use of which give these sciences a definitely Christian character.'

Are all the sciences in Stoker's encyclopaedia truly on the same level? Apparently not, considering the trans-cosmic nature of what theology investigates. It is also doubtful that there can be true equality in the interdependence between the sciences, since what a Christian philosophy depends on theology for, is nothing less than its religious apriori, in other words its Christian character. Moreover, it should be asked how free this cooperation really is. Philosophy is 'free' to formulate its ground idea, but it must be based on the exegesis done by the theologian and under the guidance of the theologian (Stoker, 1940a:11). Yes, Christian philosophers may criticise the results of theology, and they are free to choose not to appropriate the results. Yet, the choice is limited to either presupposing the results, or simply remaining without them.¹⁶ The latter option would lead to the absence of religious foundations on which a Christian philosophy could be developed.

From the preceding discussion of Stoker's scheme regarding the relationship between theology and the other sciences, there are clear indications of a theology-based approach. Things are not that simple, however. One of the underlying assumptions of the typical theology-based approach is that reality consists of two domains, one sacred and the other secular. The sacred is associated with God, religion, faith, church, special revelation and theology, and the secular with the world, the religiously neutral, reason, the state, general revelation and non-theological sciences. The typical theology-based approach can thus be seen as arising from the need to Christianise the otherwise religiously neutral non-theological sciences.

Where the presupposition of a sacred-secular dualism is still neatly operative, one would therefore expect to find the belief that non-theological scholarship is religiously neutral. But Stoker (1947:47–75) did not assume that. One would also expect the exclusion of the Bible as a legitimate source of knowledge for the non-theological sciences. Again, Stoker did not reject the Bible as a legitimate source for these disciplines. It appears, therefore, that he modified the theology-based approach so that it was slightly more in line with the ideal of an integral Christian philosophy.

Although Stoker did not subscribe to a straightforward theology-based approach, he also did not fully reject it. He modified it. Yet, defending such a position, in which not only the Bible but also several religious beliefs are effectively annexed by

¹⁶ The reason for this limitation of choice is due to Stoker's (1970:424–425) position that does not allow philosophers the freedom of independent exegesis. According to him, using the results of such independent exegesis would amount to 'playing theologian'.

theology, manifests his commitment to an approach that requires theology to be the key factor in Christian scholarship. Considering both Stoker's modifications of, and his manifested commitment to a theology-based model, a fair characterisation of his approach would be, therefore, that it is an inconsistent or a qualified theology-based approach.

Criticising the encyclopaedic scheme and the approach related to it

While explicating Stoker's approach in the preceding section, some critical remarks were made in passing. Nonetheless, his encyclopaedic scheme and the approach related to it require further critical examination. The points of criticism that will follow are not meant to be an exhaustive evaluation, as much more could be said. The intention is rather to emphasize the problematic nature of Stoker's position.

Accounting for non-Christian theology

A first difficulty arises in the attempt to account for certain non-Christian theologies in terms of Stoker's scheme. According to Stoker, theology is the study of the revealed truths of God. The obvious question, then, is what about non-Christian theologies that may accept neither the existence of God, nor the existence of any other trans-cosmic divinity? How can Stoker account for theologies that are directed by pagan or pantheistic divinity beliefs? According to pagan religious beliefs, the per se divine is a subdivision of the non-divine, while, according to pantheistic religious beliefs, the non-divine is a subdivision of the per se divine (Clouser, 2005:48). In both cases there is only one continuous reality and no trans-cosmic being that can be assigned to theology.

Stoker (1971:39) addressed this issue by drawing on the idea of absolutisation:

In the case of non-Christian theology, theology is the science of that which is taken instead of God as the absolute, for instance, the 'absolute' as in the case of the 'god' of Aristotle or of Spinoza, and its relation to all 'things'.

In other words, for an atheist who takes matter to be absolute or self-sufficient (i.e. 'divine per se' according to Clouser's definition), theology would be the science that studies matter. For the scientist who regards numbers as self-existent, theology would be the science that deals with numbers. This proposal has some odd implications.

In defending Christian scholarship against the accusation that it 'theologises' philosophy and the special sciences, Stoker (1970:107; 2010:16) replied that it is rather

those scientists who deify something within the cosmos that are in fact guilty of such theologising. Notwithstanding its wittiness, this reply points to a serious vulnerability in his scheme. From this point of view, whether theology studies God, matter, numbers, energy, life, rationality, or any other conceivable intra-cosmic candidate, depends on the divinity beliefs of the respective scholar. Not only will the religious direction of theologies differ depending on the religious beliefs presupposed by it, but such diverging theologies will not even have the same field of research in common.

In addition, each one of the cosmic sciences can potentially be or become theology. The study of the laws of logic and the relations that exist between them, for example, can be called logic. However, if a logician presupposes the laws of logic to be self-existent, he or she is not occupied with logic but with theology. Thus, determining whether a science is a cosmic science or theology does not depend only on what it studies, but also on the divinity beliefs held by the scientist.

Perhaps it may be argued that Stoker did not intend a theologised cosmic science to be seen as a genuine theology. 'Theologising' after all also has the connotation of being illegitimate. Nevertheless, he expressly proposed absolutisations of intra-cosmic realities to replace God as the subject matter of theology, in order to account for the possibility of non-Christian theologies. There is thus an ambiguity in his position, since on the one hand he seemed to recognise the need to account for non-Christian theology (cf. Stoker, 1970:91; 1971:39), while on the other he regarded such scholarship as illegitimate, even describing it as pseudo science (cf. Stoker, 1941c:54 & 58).

Conflating structure and direction

This ambiguity in Stoker's position and the odd implications resulting from it attest to a second problem, viz. difficulties in consistently maintaining the distinction between the field of research as structure and the religious orientation of the scholarly labour as direction. A tendency to conflate structure and direction thus seems to be present with the basic scheme from which Stoker proceeds. One cannot help wondering whether this is not the unfortunate remnant of a long intellectual tradition in which the divine, situated at the apex of a hierarchical metaphysics, is the *telos* to which all of reality is directed. In the 'Christianised' version of this tradition, it is the object of human contemplation, viz. the divine, that ensures the Christian character of such intellectual reflection instead of its norm conformity.

Van der Walt (1968:62) suggests correctly, therefore, that it would be preferable to talk about 'Scriptural thought' instead of 'theocentric thought' as Stoker often did. He (1968:202) also warns against the mistaken beliefs that i) the subject matter of theology makes it Christian, ii) that theology therefore necessarily is Christian and iii) that other scientific disciplines can only be Christian via doctrines borrowed from theology.

One could argue that Stoker (1970:45, 91) did account for the distinction between structure and direction regarding scholarship by means of a dual distinction. The first distinction is between genuine ('eg') and fake ('oneg') science, and the second distinction relates to a genuine science that can be either true or false. This may be understood as allowing for the possibility of a theology that is not Christian in character (i.e. false), but still genuine theology.

Such an argument would run into a serious problem, however, seeing that the religious character of a scientific theory does not coincide with the question of whether it is true or false. Clouser (2005:240) points out that a hypothesis may be within the range of biblically motivated thinking, yet be mistaken. Similarly, the theories of non-Christians, though driven by false divinity beliefs, may be correct. Therefore, the pair of contraries as suggested by Stoker does not in itself furnish the distinction between structure and religious direction.

Inconsistent application of the scheme

The third difficulty concerns the placement of heaven, known as the world of the angels. Stoker set out a division of the sciences according to the primary division of the knowable into God and cosmos. The distinction between theology and the cosmic sciences follows this God-cosmos distinction. The question then arises: where does heaven fit in? With the distinction between God and cosmos meant to be exhaustive, heaven can only be considered part of the cosmos. If Stoker then wishes to have a scientific discipline dedicated to the study of heaven (called 'ouranology'), such a discipline should be considered a cosmic science within his encyclopaedia, alongside philosophy and the special sciences.

But, instead of consistently following his chosen principle of division, Stoker (1961:241; 1971:38) decided to place ouranology within the ambit of theology. Stoker (1961:241) was well aware of this inconsistency, stating that 'it may be inconsistent, but in accordance with tradition (...) we assign ouranology as an additional task to theology'. Tradition here outweighed consistency. Can this be a remnant of the

nature–super-nature theme, in which the world of the angels is regarded as being supernatural? Figure 2 below indicates the ambiguous position of heaven when cast in the nature–super-nature mould.

Theology	Theology → God	Super-natural	God
	Ouranology → Heaven		
Cosmic sciences	Philosophy → Cosmos as a whole	Natural	Cosmos
	Special sciences → Parts within the cosmos		

FIGURE 2: The ambiguous position of heaven (as simultaneously supernatural and creational)

Seeing that Stoker (1970:412) denied being influenced by the nature–super-nature theme, it would be worthwhile to consider this issue a bit further.

Nature and super-nature

The influence of the nature–super-nature theme on Stoker’s approach to Christian scholarship becomes difficult to dismiss when the dual character of theology, as presented by Thomas Aquinas and Herman Bavinck, is compared with Stoker’s own views. What exactly does this dual character of theology entail, and what implications does it have for philosophy? In what follows we will first look at the similarities in pattern between the views of Thomas Aquinas, Bavinck and Stoker, after which some implications for establishing a Christian philosophy will be considered.

Similarity in pattern

In Thomas Aquinas, the dual character of theology follows the distinction between nature and super-nature, and it coincides with the dichotomy between faith and reason. Referring to different ways in which knowledge of the divine can be obtained, Aquinas said the following in his *Summa Contra Gentiles*:

The first is that in which man, by the natural light of reason, ascends to a knowledge of God through creatures. The second is that by which the divine truth – exceeding the human intellect – descends on us in the manner of revelation, not, however, as something made clear to be seen, but as something spoken in words to be believed. (Aquinas, SCG 4.1.5)

In this quote the first source of divine knowledge is creation, and natural reason is the means of obtaining it. There is a vertical line of direction in which we ascend to knowledge of the divine. The second source of divine knowledge is God who reveals

Himself to us. This divine knowledge is to be believed; in other words, it is appropriated by faith. Again, there is a vertical line of direction regarding knowledge, but this time descending from God to us.

The dual character of theology is clearly linked to the fact that, in addition to God, creation is brought within the ambit of theology. Since philosophy is also thought to have creation as its domain of research, some further distinction is required to address an otherwise undesirable overlap between natural theology and philosophy. The solution is sought in the different senses in which theologians and philosophers are respectively interested in creation.

In contrast to philosophers, theologians are only interested in creation so as to ‘ascend’ from it to knowledge of God. Theology’s ultimate aim is thus knowledge of God and not knowledge of creation as such. As stated by Thomas Aquinas (SCG 2.4.5), natural theology ‘considers creatures only in their relation to God’; philosophy ‘considers creatures in themselves’ (see figure 3).

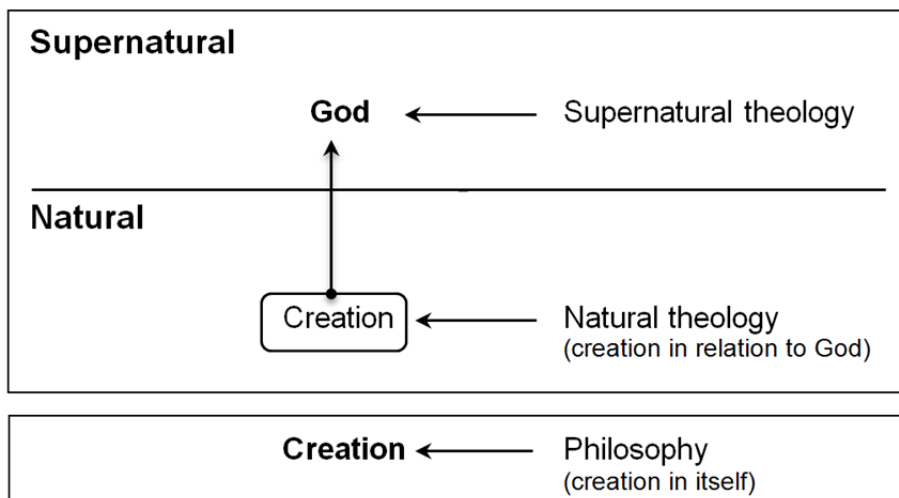


FIGURE 3: The dual character of theology in Thomas Aquinas.

A similar pattern emerges with the reformed theologian Herman Bavinck, albeit with a few modifications. Compare his following words:

Dogmatics is (...) a scientific system of knowledge of God (...) of the knowledge which He has revealed in His Word to the church about Himself and about all creatures as standing in relation to Him. (Bavinck, 1967, 1:13)

Indeed, both philosophy and theology speak about the physical world in different senses. [Philosophy] investigates the origin and nature of all things, but [theology] proceeds from God, and leads everything back to Him; it has only to do with the creatures to the extent that they are works of God and reveal some of his virtues; also where it deals with creatures, it is and always remains theology. (Bavinck, 1967, 2:435)

Here, too, theology has a double character, being concerned with God and creation: God as He revealed Himself, and creation as it stands in relation to God. Since philosophy also deals with creation, an explanation of how this discipline differs from (natural) theology is required. Hence, according to Bavinck, theology and philosophy 'speak about the physical world in different senses'. With theology it is creation in relation to God, and with philosophy it is the 'nature' of creation as such (see figure 4).

Once again the pattern described above can be noticed in Stoker as well. Granted, in Stoker's encyclopaedia there are not two theologies – one called natural theology and the other supernatural theology – as there are with Thomas Aquinas. Nevertheless, the single theology of Stoker still features the same dual character (cf. Van der Walt, 2013:9) and the implications for philosophy are quite similar. Almost all of Stoker's descriptions of theology bear this out.¹⁷ Just compare the following two definitions:

Theology is a. the science of the revealed truths of God (e.g. his essence and attributes), and b. of the cosmic totality and cosmic diversity, insofar as they are immediately dependant on God. (Stoker, 1940b:106)

Theology is the science of the truths revealed by God in His Word and in His creation about Himself and about the cosmos (as totality and as diversity) in respectu Dei, that is in the immediate relation in which God stands to His creation and to anything in it. (Stoker, 1951:46)

Since the ultimate aim of theology remains knowledge of God, it is primarily concerned with God and only secondarily with the cosmos. In other words, theology's interest in the cosmos is limited to the cosmos' relation to God, or as it is seen '*in respectu Dei*.'¹⁸ Philosophy, in turn, is concerned with the cosmos as such. This means that theology and philosophy respectively approach the cosmos with a distinct gaze or perspective ('blik' in Afrikaans).

¹⁷ The only exception I am aware of was penned quite early in his career. There, Stoker (1933a:13) restricted the field of theology to God and God's *relation to creation* (descending) and philosophy to creation and its *relation to God* (ascending). The 'descending' and 'ascending' directional relations between God and creation, therefore, constituted the distinction between theology and philosophy, and not a distinction within a twofold theology as it did with Thomas Aquinas and Bavinck. However, Stoker could not sustain this earlier view of his, as it would imply a conception of Christian philosophy that is identical to what is generally understood to be natural theology. This would have undermined his claim, against that of some neo-Thomistic philosophers, that it is indeed possible to have a Christian philosophy that is distinguishable from (natural) theology.

¹⁸ It appears that for Stoker (1941b:146) viewing creation as a revelation of God (*revelatio Dei*), is the same as viewing creation in its relation to God (*in respectu Dei*).

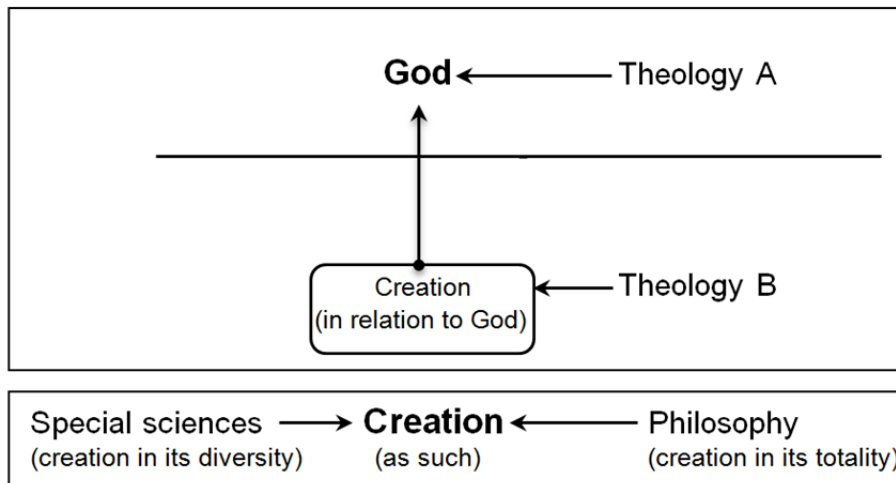


FIGURE 4: The dual character of theology in Herman Bavinck and Stoker.

What is new with Stoker is that, in addition to the two perspectives on the cosmos mentioned above, he also added a special scientific perspective. Both philosophy and the special sciences are concerned with the cosmos as such, but in different senses. Philosophy is concerned with the cosmos in its totality, while the special sciences are concerned with the cosmos in its diversity. The strategy used to avoid an ‘overlap’ between (natural) theology and philosophy is, therefore, replicated in order to prevent an ‘overlap’ between philosophy and the special sciences.

Integral Christian philosophy at stake?

Stoker’s views discussed above have detrimental implications for the ideal of an integral Christian philosophy. In order to avoid encroaching on the domain of theology, philosophy is supposed to investigate creation in itself.¹⁹ In other words, it investigates creation apart from its relation to God. One should remember that, according to Stoker’s definition of theology, approaching creation in its relation to God would amount to (natural) theology.

From this, a philosophical conception of the cosmos logically follows according to which it is ‘perspectively’ presupposed to be subsisting in itself, for in one’s philosophical investigation the cosmos is either seen in its dependence on God, or it is not.²⁰ One way in which the unbiblical conception of a self-existing cosmos can still

¹⁹ Investigating creation ‘as such’ is equivalent to investigating creation ‘in itself’ (cf. Stoker, 1941b:146). Stoker (1970:426) also used the expressions ‘own nature’ (‘eie-aard’), ‘own being’ (‘eie-syn’) and ‘own value’ (‘eiewaarde’) more or less synonymously.

²⁰ Stated differently, if the former option is chosen, one is no longer approaching the cosmos from a philosophical perspective. If the latter is chosen, the cosmos is seen as if it is independent of God, i.e. as if it is subsisting in itself.

be circumvented is if the relations of creation to God, such as its dependence on God, are imported as theological presuppositions.²¹

This is exactly what Stoker, perhaps unconsciously, did.²² According to him (1941b:146–147), a Christian philosophy should, in its investigation of the cosmos, presuppose the ‘theological truths’ such as that the cosmos was created, that it is self-insufficient and that it is subject to the law. These are the same ‘religious apriori’ as mentioned earlier. Note that, in the quoted definitions of philosophy below, these ‘theological truths’ are incorporated as a list of qualifiers describing the cosmos or, even more tellingly, placed in brackets:

Philosophy is a. the science of the (God created) self-insufficient, law-bounded cosmic totality, and b. of the place that the respective, cosmic-irreducible and law-bounded groups of phenomena take within this cosmic totality. (Stoker, 1940b:106)

Philosophy is the science of the (God created and governed, self-insufficient, law-bounded) cosmos as totality and of the place that any particular cosmic given takes within this totality. (Stoker, 1951:46)

Stoker’s way of delineating philosophy and theology therefore does not proceed from a philosophical perspective of the cosmos that is from the outset Christian. Instead, some manoeuvring is required in an attempt to neutralize the unbiblical implications, making the possibility of having a Christian philosophy once again dependent on theology.

Establishing pseudo congruency

In addition to it being a pattern of thought with negative implications, nature and super-nature is, as Vollenhoven (2011:204) explained, also a method of synthesis.²³ With Stoker’s theology-based approach the intention is to synthesise or reconcile the scholastic tradition in reformed theology with reformational philosophy. After all, a theology-based approach in a sense requires Christian philosophers to accept what is offered to them by reformed theology. Stoker’s synthesis, with its philosophical substrate and theological superstructure, entails some complexities and a variety of adjustments.

²¹ The inherent potential in theology-based approaches for theology to usurp almost everything is often less restrained than it is with Stoker. Compare for example Coletto’s (2009b:99–102; 2009c:29–31) discussion of P. Bolognesi, L. De Chirico and J. Frame, as well as Strauss’ (2015:202, 207) critique of J. Milbank.

²² See also Stoker’s response to similar criticism raised by Dooyeweerd (1957, 3:68) and Malan (1968:133). To reaffirm his belief in the self-insufficiency of the cosmos, Stoker (1970:427) was compelled to place the cosmos within the context of its relation to God, which – according to his own definition – implies a theological, and not a philosophical, perspective on the cosmos. He seems to be unaware of this inconsistency.

²³ The pattern is a method of synthesis in that it organises the two bodies of knowledge to be synthesised, into two distinct spheres, viz. nature and super-nature.

On at least one occasion, what he presented as a balanced synthesis was actually the reformational position on the particular issue being fully eclipsed by the reformed scholastic one. This is seen in one of Stoker's (1940a) articles dealing with the relation between the fields of theology and philosophy. For the broader context, Stoker mentioned the crisis in which Calvinist thinkers in the Netherlands found themselves due to the conflict between Hepp and his followers on the one hand, and the position of Vollenhoven and Dooyeweerd on the other. The views and perceived dangers of the competing sides in the conflict were juggled by Stoker with the purpose of finding the preferred middle ground. Despite the appearance of dealing with the disagreements even-handedly, reformational philosophy actually bore the brunt of the required compromise. In practice, the whole dispute was decided in favour of the orthodox view held by reformed theologians of that time, without really addressing the criticisms brought against it by reformational philosophers.²⁴

In another instance, Stoker shared a theory with other reformational philosophers, but had to restrict its implementation so as not to conflict openly with the scholastic notions he inherited from theologians like Bavinck and Hepp. This happened with Stoker (1961:164–167) adopting the reformational theory of aspects, but avoiding its application to questions pertaining to the encyclopaedia of the sciences. That would have brought him too close to the idea that theology is a special science delimited in its field of study by a fiduciary perspective on reality. Instead, he continued to delimit the particular sciences in terms of objects or things. In his own formulations, for example, he speaks of 'phenomena' (1940c:307), a 'section' or 'part' of the cosmos (1947:71), 'givens' (1961:242) and 'things' (1971:39).²⁵

²⁴ Stoker (1940a:10) thought that Dooyeweerd's designation of theology as a special science had in view the difference between God's infinitely higher 'science' of Himself and our humanly limited science of God. In other words, Stoker misunderstood Dooyeweerd as merely reaffirming the scholastic distinction between *theologia archetypa* and *theologia ectypa* (see the critical discussion of this distinction by Strauss, 2010:139). As a consequence, Stoker's argument, that theology is not a special science because the truths about God are not a part of the cosmos, in effect begs the question. His argument already takes for granted that theology is a science of God, which is exactly what reformational philosophers were disputing. Many years later, Stoker (1971:39, footnote 26 on p. 456) repeated a similar circular argument against theology being 'degraded' to a special science.

²⁵ The problem is that human behaviour, for instance, can be a field of study for psychologists, historians, ethicists, sociologists, economists, etc., which means that the human being as an entity cannot function as a criterion for demarcating these disciplines from each other (see also Clouser, 2005:161-163). Stoker (1940b:103) realised that 'theology, philosophy and the various special sciences investigate the same phenomena, e.g. the human being, his soul, life, matter ["stof"], time, space (...)' and hence proposed the idea of perspectival directions as a solution to this problem. It is not clear, however, how this second principle of division is to solve the problem of the overlap between the fields of study of the special sciences themselves, since in Stoker's view they all share the same perspectival direction.

In addition, the philosophical influences on Stoker's work from outside Calvinist circles should also be kept in mind, not only on the philosophical 'substrate' of the synthesis, but also on its theological 'superstructure'. Regarding the former, certain facets of Stoker's epistemology, for instance, owe more to Max Scheler's phenomenology than they do to reformational philosophy. What Stoker used to philosophically elaborate the fourth type of revelation distinguished by Bavinck and Hepp, viz. the revelation of the created universe to the human knower (cf. Stoker, 1971:30), was Scheler's idea of the revealing character of phenomena (cf. Stoker, 1967:239 and Van der Walt, 2013:9).

Regarding the theological 'superstructure', it should be considered that reformed theology had developed since the sixteenth-century Reformation in the absence of a Calvinist philosophy. Seeing that a pure theology without any philosophical presuppositions is impossible (Strauss, 2002), it stands to reason that some non-Christian philosophical concepts found their way into reformed theology. To the extent that these were commonly accepted, they became part of reformed orthodoxy. It is from these that Vollenhoven and Dooyeweerd wanted to untangle Calvinist thought.

All the detail of the resulting synthesis cannot be analysed fully here; however, the above may suffice as an illustration of its complexities. Two lessons deserve emphasis. First, even where obvious incompatibilities are addressed and logical contradictions are avoided by means of slight alterations of ideas and theories, the resulting synthesis may still not be fully congruent. For even if, by reshaping it, a puzzle piece can be fitted snugly into a slot, the picture thus formed will not necessarily be an accurate semblance of the one on the box. Second, heed should be taken of the real threat that, with a departure from the anti-synthetic attitude of reformational philosophy, some of its most promising innovations could be made ineffectual. This is what I suspect was, to some extent, the fate of the theory of modal aspects in Stoker's philosophy.

Conclusion

In this article it was argued that Stoker did not assume the same critical posture as Vollenhoven and Dooyeweerd towards their immediate Calvinist predecessors. As attested to by Stoker's life-long deliberation on encyclopaedic issues, he availed himself of a slightly modified theology-based approach. As his encyclopaedia and approach displayed the nature–super-nature scheme, they could fulfil a synthesis

function suited to Stoker's dual commitment to reformed scholasticism and reformational philosophy.

The desire to bring the theological and philosophical insights of Calvinist scholars together is understandable. However, a fundamental choice presented itself to Stoker; either to maintain scholasticism's persistent need for accommodation as a strategy, or to strive for continual reformation. As the title of Dooyeweerd's trilogy 'Reformation and Scholasticism in Philosophy' reminds us, these remain the two basic options. By opting for an uneasy union, Stoker seemed unable to come to terms with reformational criticism against scholasticism.

That Stoker still made valuable contributions is by no means excluded by this critical account of his approach. Rather, the suggestion is that reformational philosophers may find this article useful in future attempts at interpreting his philosophy and evaluating his proposals.

References

- Aquinas, T., 1955, *Summa contra Gentiles, 4 Books*, transl. A.C. Pegis, J.F. Anderson, V.J. Bourke and C.J. O'Neil, Hanover House, New York.
- Bavinck, H., 1967, *Gereformeerde dogmatiek, Vier delen*. J.H. Kok, Kampen.
- Clouser, R.A., 2005, *The myth of religious neutrality: an essay on the hidden role of religious belief in theories*, rev. edn., University of Notre Dame Press, Notre Dame.
- Coletto, R., 2009a, 'Strategies towards a reformation of the theology-based approach to Christian scholarship', *In die Skriflig/In Luce Verbi*, 43(2), 291–313.
- Coletto, R., 2009b, 'Theology and philosophy: the controversies concerning their nature and role in the reformational tradition', *Journal for Christian Scholarship*, 45(3):97–115.
- Coletto, R., 2009c, 'Christian scholarship within reformed circles', *Acta Academica*, 41(3):16–41.
- Dooyeweerd, H., 1939, 'Kuyper's wetenschapsleer', *Philosophia Reformata*, 4(1), 193–232.
- Dooyeweerd, H., 1957, *A new critique of theoretical thought*, vol. 3, Presbyterian and Reformed Publishing Company, Philadelphia.
- Dooyeweerd, H., 1958, 'De verhouding tussen wijsbegeerte en theologie en de strijd der faculteiten, I', *Philosophia Reformata*, 23(1&2), 1–21.
- Hart, H., 1971, 'Malan's critical study', in *Truth and reality: philosophical perspectives on reality dedicated to professor Dr. H.G. Stoker*, De Jong's Bookshop, Braamfontein, pp. 109–121.
- Heyns, J.A., 1994, 'Die betekenis van H.G. Stoker se filosofie vir die teologie', *Koers – Bulletin vir Christelike Wetenskap*, 59(3&4), 455–471.
- Malan, D.J., 1968, *'n Kritiese studie van die wysbegeerte van H.G. Stoker vanuit die standpunt van H. Dooyeweerd*, PhD Proefschrift, Vrije Universiteit te Amsterdam, Buijten & Schipperheijn, Amsterdam.
- Norval, E.J.G., 1950. *Die onderskeid en die verband tussen die teologiese etiek, wysgerige etiek en vakwetenskaplike etiek: met besondere toespitsing op die onderskeid en verband tussen Gereformeerd-teologiese etiek, Calvinisties-wysgerige etiek en Christelike-vakwetenskaplike etiek*, MA Verhandeling, PU vir CHO, Potchefstroom.
- Raath, A.W.G., 1994, 'Soli Deo gloria: die lewe en werk van prof. dr. H.G. Stoker (4 April 1899 – 16 Mei 1993)', *Koers – Bulletin vir Christelike Wetenskap*, 59(3&4), 343–361.
- Schutte, B.J., 1972, *Die noodwendigheid van 'n Christelike wetenskap in die wetenskapsleer van H.G. Stoker*, PhD Proefschrift, RAU, Johannesburg.
- Stellingwerff, J., 2006, *Gesiedenis van de reformatorische wijsbegeerte: een Christelijke perspectief*, Stichting voor reformatorische wijsbegeerte, Amersfoort.

- Stoker, H.G., 1927, 'Oor enkele grondbeginsels van 'n teïstiese filosofie, I–VIII', *Woord en Geest: Gereformeerde Weekblad*, 3(3–11), 3–83.
- Stoker, H.G., 1933a, *Die wysbegeerte van die skeppingsidee of grondbeginsels van 'n Calvinistiese wysbegeerte*, De Bussy, Pretoria.
- Stoker, H.G., 1933b, *Die nuwere wysbegeerte aan die Vrije Universiteit (Amsterdam)*, De Bussy, Pretoria.
- Stoker, H.G., 1933c, *Die slakkehuisteorieë van die bewussyn of iets oor die wese van die bewussyn*, De Bussy, Pretoria.
- Stoker, H.G., 1935, 'The possibility of a Calvinistic philosophy', *The Evangelical Quarterly*, 7, 17–23.
- Stoker, H.G., 1937a, 'God (Theos) en wêreld (kosmos)', *Koers – tweemaandelikse tydskrif*, 4(4), 4–13
- Stoker, H.G., 1937b, 'Grep uit die wysbegeerte van die wetsidee: "ken uself"', *Koers – tweemaandelikse tydskrif*, 5(1), 11–17.
- Stoker, H.G., 1937c, 'Grep uit die wysbegeerte van die wetsidee: sy naam', *Koers – tweemaandelikse tydskrif*, 5(2), 17–24.
- Stoker, H.G., 1937d, 'Grep uit die wysbegeerte van die wetsidee: sy verhouding tot vakwetenskap', *Koers – tweemaandelikse tydskrif*, 5(3), 22–27.
- Stoker, H.G., 1938a, 'Grep uit die wysbegeerte van die wetsidee: die wetskringe', *Koers – tweemaandelikse tydskrif*, 5(4), 33–39.
- Stoker, H.G., 1938b, 'Grep uit die wysbegeerte van die wetsidee: nog eens die wetskringleer', *Koers – tweemaandelikse tydskrif*, 6(1), 8–14.
- Stoker, H.G., 1938c, 'Grep uit die wysbegeerte van die wetsidee: die individualiteitstrukture', *Koers – tweemaandelikse tydskrif*, 6(2), 24–30.
- Stoker, H.G., 1939, 'Grep uit die wysbegeerte van die wetsidee: die subjek-objek-relasie', *Koers – tweemaandelikse tydskrif*, 6(5), 16–23.
- Stoker, H.G., 1940a, 'Grep uit 'n Calvinistiese wysbegeerte: die verhouding tussen teologie en wysbegeerte', *Koers – tweemaandelikse tydskrif*, 7(6), 1–11.
- Stoker, H.G., 1940b, 'Grep uit 'n Calvinistiese wysbegeerte: terreinafbakening tussen teologie, wysbegeerte en vakwetenskap', *Koers – tweemaandelikse tydskrif*, 8(3), 101–111.
- Stoker, H.G., 1940c, 'Beginsels van 'n Christelike wetenskapsleer', in H.G. Stoker & J.D. Vorster (eds.), *Koers in die krisis, II: artikels versamel deur die Federasie van die Calvinistiese Studenteverenigings in Suid-Afrika*, pp. 293–331, Pro Ecclesia, Stellenbosch.
- Stoker, H.G., 1941a, 'Grep uit die wysbegeerte van die wetsidee: selfbesinning en wysbegeerte', *Koers – tweemaandelikse tydskrif*, 8(6), 219–228.

- Stoker, H.G., 1941b, 'Grepe uit 'n Calvinistiese wysbegeerte: phanerosis en wysbegeerte', *Koers – tweemaandelikse tydskrif*, 8(4), 140–149.
- Stoker, H.G., 1941c, 'Grepe uit 'n Calvinistiese wysbegeerte: palingenesie en wysbegeerte', *Koers – tweemaandelikse tydskrif*, 9(2), 49–58.
- Stoker, H.G., 1947, 'Calvinistiese wysbegeerte', *Standpunte – onafhanklike Kwartaalblad vir Literatuur en Kuns*, 2(3), 68–78.
- Stoker, H.G., 1951, 'Teologiese, wysgerige en vakwetenskaplike etiek', in *Wetenschappelijke Bijdragen door leerlingen van dr. D.H.Th. Vollenhoven, aangeboden ter gelegenheid van zijn 25-jarige hoogleraarschap aan de Vrije Universiteit*, T Wever, Franeker, pp. 44–51.
- Stoker, H.G., 1952, 'Scriptural truths and scientific thought', *The Calvin Forum*, 17(7), 124–130.
- Stoker, H.G., 1961, *Beginsels en metodes in die wetenskap*. Pro Rege, Potchefstroom.
- Stoker, H.G., 1962, 'Die beginsel: eenheid en differensiasie', *Koers – maandblad vir Calvinistiese denke*, 30(1&2), 20–45.
- Stoker, H.G., 1967, *Oorsprong en rigting, band 1*, Tafelberg Uitgewers, Kaapstad.
- Stoker, H.G., 1970, *Oorsprong en rigting, band 2*, Tafelberg Uitgewers, Kaapstad.
- Stoker, H.G., 1971, 'Reconnoitering the theory of knowledge of Prof. Dr. Cornelius van Til', in E.R. Geehan, (ed.), *Jerusalem and Athens: critical discussions on the theology and apologetics of Cornelius van Til*, pp. 25–71, Presbyterian and Reformed Publishing Company, Philadelphia.
- Stoker, H.G., 1981, 'Oopheid in die wetenskap', gesproke rede met aanvaarding van die ere-professoraat in die Departement Filosofie aan die PU vir CHO, in *Uit, deur en tot God is alle dinge: werke van Prof. Dr. H.G. Stoker*, CD, Vereniging vir Christelike Hoër Onderwys, Bloemfontein.
- Stoker, H.G., 2007, 'Formele struktuur van tyd', in *Uit, deur en tot God is alle dinge: werke van Prof. Dr. H.G. Stoker*, CD, Vereniging vir Christelike Hoër Onderwys, Bloemfontein.
- Stoker, H.G., 2010, *Philosophy of the creation idea*, transl. J.L. van der Walt, School of Philosophy, Potchefstroom Campus, North-West University, Potchefstroom.
- Strauss, D.F.M., 1969, *Wysbegeerte en vakwetenskap*, MA Verhandeling, Departement Filosofie, Universiteit van die Vrystaat, Sacum, Bloemfontein.
- Strauss, D.F.M., 2002, 'Is it possible to do theology without philosophical presuppositions?', *Acta Theologica*, 22(1), 146–164.
- Strauss, D.F.M., 2010, 'God in himself' and 'God as revealed to us: the impact of the substance concept', *Acta Theologica*, 30(1), 123–144.
- Strauss, D.F.M., 2015, 'Theology and philosophy within radical orthodoxy (Milbank) and reformational philosophy (Dooyeweerd)', *Acta Theologica*, 35(1), 201–221.

- Tol, A., 2011, 'Reformational philosophy in the making', *Philosophia Reformata*, 76(2), 187–215.
- Van der Stelt, J.C., 2012, *Herman Bavinck (1854–1921)*, Chapter 4, (unpublished manuscript).
- Van der Walt, B.J., 1968, *Die wysgerige konsepsie van Thomas van Aquino in sy 'Summa contra gentiles' met spesiale verwysing na sy siening van teologie*, MA Verhandeling (onverkort), PU vir CHO, Potchefstroom.
- Van der Walt, B.J., 2007, 'Ad fontes: eerste boustene vir 'n geskiedenis van die reformatoriese filosofie – ook in Suid-Afrika', *Tydskrif vir Christelike Wetenskap*, 43(3&4), 217–234.
- Van der Walt, B.J., 2013, 'H.G. Stoker (1999–1993) as Christelike filosoof: 'n historiese legende en ikoon, of nog steeds 'n kontemporêre mentor?', *In die Skriflig/In Luce Verbi*, 47(1), Art. #86, 15 pages. <http://dx.doi.org/10.4102/ids.v47i1.86>.
- Van der Walt, S.P., 1953, *Die wysbegeerte van Dr. Herman Bavinck*, PhD Proefskrif, Pro Rege, Potchefstroom.
- Vollenhoven, D.H.Th., 2011, *Gastcolleges wijsbegeerte: erfenis voor het heden*, in K.A. Bril, & R.A. Nijhoff (eds.), *De Zaak Haes*, Amstelveen.

ARTICLE 2:

An exploration of H.G. Stoker's (1899–1993) contributions to methodology

Abstract

Stoker's early exposure to a milieu characterised by a preoccupation with methodology should serve as a backdrop for an appreciation of his theoretical work on methods. It is argued that his work resulted in a methodological perspective that underscores the limited role of method as merely a means to an end. It is a perspective that acknowledges the multiplicity and complementarity of methods, undermines the myth that the method of inductive verification is *the* scientific method, and rejects methodological monism and scientism. However, the influence of natural scientific and metaphysical rationalism on Stoker manifests itself in his definition of science and of scientific method. Although his intention to disclose the normative dimension of method is welcomed, it is questioned whether the introduction of a family of deontological sciences, including a deontology of methods, would really promote this cause. Finally, a modal analysis of methods as historically qualified artefacts is proposed as an alternative to Stoker's analysis, which is more inclined towards objectivism. In this way, it is hoped that modal norms for methods can be more accurately identified, and that sufficient emphasis can be placed on norms holding also for the design of methods.

Introduction

With the aim of furthering the development of Christian scholarship, reformational philosophers have criticised the idea that science should be, and indeed can be, religiously neutral. Much attention has been given to the structural conditions that make theoretical thought possible, the direction giving effect of religious ground motives, the influences of world views and the correct use of the Bible in Christian scholarship. Moreover, strategies, approaches and models for Christian scholarship have been developed, used and scrutinised. There have also been debates on the proper role of, respectively, theology and philosophy in the advancement of Christian scholarship.

These and other themes have been examined to some extent within the context of the ideal of Christian scholarship – and rightly so. Another area that deserves systematic attention in this regard is methodology. Spykman (1985:77) reminds us that:

Christian scholarship calls not only for choosing self-consciously to stand within a Scripturally-directed philosophical perspective and to rely upon Scripturally-normed presuppositions and principles, but also *to forge Scripturally-informed methods, procedures, and tools of analysis.*¹

It is no coincidence that these words were written in a booklet following Spykman's academic interchanges during his five-week visit in 1983 to the Potchefstroom University of Christian Higher Education in South Africa. The name of the Calvinist philosopher Hendrik Gerhardus Stoker (1899–1993) is intimately connected to this institution. Stoker had the task of founding the department of philosophy there, where he taught and worked from 1925 until 1969 (Raath, 1994:349, 354). More specifically, he left us with contributions within the field of methodology meriting further reflection (Van der Merwe, 1993:96).

This brings us to the aim of this article, which is to explore and evaluate the contributions Stoker made in methodology. What is it that we can learn from him and where should we perhaps consider taking a different route? It will be argued that Stoker drew on some key features that are appropriate for a reformational methodology. At the same time, some remaining influences of a rationalist tradition need to be discerned, and a few systematic distinctions and concepts reconsidered. The discussion will start with a historical background and then proceed to a survey and evaluation of his methodological contributions.

A milieu of methodological preoccupation

The intellectual environment in the 19th and early 20th centuries was one in which methodology was central to the academic agenda. Van Belle's (2014:147) description of a 'nearly universal intense preoccupation with methodology' is quite suited for this period. Some wanted to obtain for their discipline the same success and respectability as the natural sciences had achieved, by following their example. Hence, empirical observation, rigorous experimentation and the verification of hypotheses became the methodological design of choice (cf. Strauss, 1994:102). This is the tradition of natural scientific rationalism, of which positivism is a part.

¹ Emphasis added; the same for all other italicised words or phrases given as quotes, unless otherwise stated.

In contrast, others emphasised the distinctness of the *Geisteswissenschaften* with reference to the method(s) believed to make this group of disciplines unique. Examples are Droysen's contrast of *Verstehen* ('understanding') with *Erklärung* ('explanation') and Windelband's distinction between the idiographic and nomothetic approaches. Van Belle (2014:147) calls this second tradition, in which methodological issues also occupied centre stage, 'metaphysical rationalism'. From it, anti-positivism emerged as a methodological alternative to positivism.

The preoccupation with methodology was universal in the sense that the central claims of the two major traditions were debated in terms of methodology. These are claims regarding the legitimate subject matter of disciplines, the data that may be admitted as evidence, how disciplines are to be delimited, and when and whether a discipline truly bears the status of being a science. Answers to these questions were often sought in methodology. In this way, the importance of method became exaggerated to such an extent that its proper place and nature became misconstrued (cf. Van Belle, 2014:148). Method became much more than just a means to an end.

Stoker's early methodological exposure

When Stoker undertook his doctoral studies in Germany during the early 1920s, interest in methodology was still prominent. In addition to the phenomenological methods of Husserl and Scheler at that stage, there was, for instance, also an interest in the transcendental method of the neo-Kantians. Of special note, however, is the emergence of the experimentally based psychology of consciousness, with one influential school centred in Würzburg and another in Berlin. Stoker is known as a philosopher who worked with the phenomenological method. Perhaps it is not as well known that he had intended to further his studies in experimental psychology as well. Soon after completing his doctoral thesis with Scheler, he planned two additional semesters for such studies at various universities in Europe, mostly in Germany (Beijk & Van der Merwe, 1994:508–511).

The German psychologists² Stoker had an interest in (Beijk & Van der Merwe, 1994:510) are associated with the schools in Würzburg and Berlin mentioned above.

² Stoker referred to Wolfgang Köhler, Max Wertheimer, Kurt Koffka and Karl Bühler, all gestalt psychologists, as well as Erich Jaensch and William Stern, both students of Hermann Ebbinghaus. It was Ebbinghaus who showed that cognitive functions, and not only perception and sensations, could be researched experimentally (Van Belle, 2014:158).

For these early psychologists, the content of human consciousness was the subject matter of psychology; hence the name 'psychology of consciousness'. Their preferred method was that of introspection. They understood introspection as the inner observation of consciousness that is to be executed under experimental conditions.

Furthermore, according to them, psychology should deal with what is positively given, observable, replicable and controllable.³ For some, these data would consist of the most basic constitutive elements of consciousness, such as discrete sensations of colour or of sound. For those who were more influenced by holism than by the atomism of the British empiricists, the positively given datum within consciousness comes in the form of a unified whole, such as a form quality or gestalt (Van Belle, 2014:155–171).⁴

Stoker seemed to have accepted from psychology of consciousness the view that laboratory-based experimentation is a valuable scientific method. He considered, for example, establishing a laboratory for an introductory course in experimental psychology at the Potchefstroom University College. To this end, he asked F.J.J. Buytendijk for advice about the equipment required (Beijk & Van der Merwe, 1994:522). Yet Stoker was also aware of the fact that experimentation has its limits, and expressed interest in exactly this issue⁵ (Beijk & Van der Merwe, 1994:518).

In addition to the importance of methodology and the (limited) value of the experimental method, another facet of the psychology of consciousness left its mark on Stoker, namely its focus on consciousness. It is worth mentioning a manuscript Stoker (1933) wrote about a decade after his doctoral studies. In this manuscript, he dealt with how consciousness, as well as its structure, functions and contents, ought to be conceived so as to avoid the pitfalls of 'snail house theories'. He wanted to prevent human consciousness from being closed off from reality in a metaphorical 'snail house'. The issue of how things in themselves relate to how they appear in our consciousness was therefore part of the epistemological set-up Stoker started out with. The position he proposed is that things are revealed to us in such a way that

³ By implication, whatever was not pliable to their chosen research methodology was excluded in advance from the domain of psychology as a science.

⁴ The core meaning of the quantitative aspect (viz. discrete multiplicity) is overemphasised in psychic atomism, while psychic holism overextends the part-whole relation found in the aspect of space (see Strauss, 2009:497).

⁵ Stoker showed interest in Eduard Spranger, a student of Wilhelm Dilthey, and Werner Sombart, a member of the historical school of economics. This suggests that Stoker also had an awareness of the metaphysical rationalist tradition and its critique of scientific rationalism.

the 'primary content' of consciousness is simultaneously immanent in, and transcendent to, consciousness (Stoker, 1933:8–10).

There is also an inner connection between gestalt psychology's tradition of investigating human consciousness and Stoker's phenomenology. Consider for example the title of his doctoral thesis 'Phenomena of conscience: a *psychological-philosophical* study', which was later published as 'The conscience: *forms of appearances* and theories'.⁶ Note the description of the study as psychological-philosophical, and the characterisation of the subject of the study as being 'phenomena' and 'forms of appearances'. From this, one can detect a few commonalities between gestalt psychology and Stoker's phenomenological analysis of conscience. These commonalities include an investigation with a (partly) psychological angle of approach, phenomena that are thought to have a form quality or gestalt-like nature, and forms of appearances within consciousness as the subject matter of research.

Considering all of the above, one can say that, early in his career, Stoker was exposed to an intellectual environment in which there was an emphasis on form qualities appearing in human consciousness. The stage was thereby set for Stoker's use of the phenomenological method in his own philosophical undertakings. In addition, those days were marked by a general preoccupation with methodology, so much so that Stoker could hardly imagine the opposite danger of scientific methods being underestimated.⁷ Furthermore, he was confronted with the competing methodological claims of two traditions: One arguing for the superiority of a methodological design that emulates the natural sciences, and the other arguing for the uniqueness of a domain surpassing nature and requiring its own method(s). With this as background, we can now better appreciate the methodological contributions that Stoker later made in his career.

⁶ The original titles in German read: '*Gewissensphänomene: Eine psychologisch-philosophische Studie*' and '*Das Gewissen: Erscheinungsformen und Theorien*' respectively (Stoker, 1933; Beijik & Van der Merwe, 1994:513–514).

⁷ As late as the beginning of the second half of the 20th century, Stoker (1961:101) still believed that 'there is little danger for the underestimation of the meaning of scientific method as method'. Feyerabend's book *Against method* was first published in 1975.

A survey of methodological contributions

From a survey of Stoker's work, four interrelated areas can be identified in which he made contributions towards a reformational methodology. These are i) his overview of scientific methods, ii) his discussion of several specific methods, iii) his analysis of the nature of scientific method, and iv) his deontology of scientific method (see Stoker 1961; 1970a; 1970b). The discussion here will follow the same sequence.

Overview of scientific methods

Stoker (1961:52–61) provided an overview of a great variety of scientific methods in his textbook 'Principles and methods in science'.⁸ Courses dealing with methodology are often aimed at inducting students to the practice of scientific research in a specific field. Stoker's course, however, exposed students to a very large number of methods from a broad range of disciplines. Some of the methods are associated more closely with a particular discipline, while others are very general and common to many fields. This broadness in scope makes Stoker's overview rather special as it lends itself towards a deeper reflection on the theory of methods.

To bring order to his overview, Stoker classified the methods according to four different principles of division.⁹ The significance of Stoker's classifications¹⁰ is not their completeness. The classifications are also to some extent dated from today's perspective. Stoker (1961:52) was himself upfront about some of these limitations. Nevertheless, he was able to say, 'To my knowledge there exists no publication that systematically brings scientific methods together in an overview'. Herein lies the value of Stoker's classification: It provides a broad overview of scientific methods, thereby bringing attention to the fact that there is a vast range of methods being used in academia.

Thus, the divisions emphasise the plurality of methods used in scholarship as a fact. In light of this, Stoker believed that it is arbitrary to identify the empirical method of hypothesis verification as *the* scientific method. Why should this method qualify as

⁸ The Afrikaans title is *Beginsels en metodes in die wetenskap*. It was the prescribed textbook from 1955 in a compulsory course for all first-degree students at the Potchefstroom University for Christian Higher Education.

⁹ Stoker only provided a discussion of the classification in Afrikaans. To make it more accessible, an English rendering of Stoker's four divisions is provided in table format as an appendix.

¹⁰ Stoker used the term 'divisions' (*indelings* in Afrikaans). He (1961:73) gave 'classification' a technical meaning and reserved its use for a certain kind of division only.

being scientific, and not the others? Because Stoker (1961:90) recognised the plurality of methods in scholarship, he regarded the elevation of one of these methods above the others as one-sided and unfair favouritism. In this way, he helped undermine the myth of *the* scientific method.

Stoker's overview of scientific methods therefore points towards a methodological perspective that positively asserts method plurality in science and, correlated to this fact, rejects methodological scientism and monism.¹¹

Discussion of specific methods

Stoker's (1961:61–101) discussion of certain specific methods brings forth a few additional pointers relevant for the development of a reformational or non-reductionist theory of methods. Included in his discussion are the methods of observation, definition, division, classification, deduction, induction, analysis, synthesis, the inductive method of hypothesis verification and the methods of understanding and explanation. To these can be added the phenomenological or diaphanerotic method (Stoker, 1967:238–243, 307–309; 1970b:341–344), as well as the methods of 'abstracting isolation' and 'relevant selection' (Stoker, 1970b:197–201). Only what is pertinent to the present purposes will be discussed.

Stoker's (1961:61–63) discussion of the method of observation, in the first place, included a focus on the rules according to which observation is to be done. These rules need not be discussed in-depth here. What should be noted is that they are more or less meant to be specific to the method of observation. Stoker mentioned, for example, that what he called the fallacies of 'non-observation' and 'mal-observation' must be avoided by following certain rules applicable to observation. Rules, therefore, are a function of the design of a particular method and stipulate its correct use as intended with its design.¹²

In contrast to rules, the scope of the norms that Stoker discussed elsewhere (1970b:191–194) are clearly meant to apply to all scientific methods. Moreover, a few

¹¹ Stoker did not use these exact terms. 'Methodological scientism' here refers to the reduction of scientific methods to specifically natural scientific method(s). Methodological monism also entails the negation of the plurality of scientific methods in some way, with the difference that it does not specify the preferred method to be natural scientific in character.

¹² Rules may also specify which steps should be taken, as well as in what sequence. See the definition of method below as 'specification of steps (...) in a given order' (Caws, 1967:7:339).

years later he (1970a) cautioned against confusing rules and norms in the context of methods, thereby affirming a significant difference between them. His recognition of this distinction enables the normative dimension of scientific method to be brought into view; a dimension which will be elaborated later.

Second, Stoker (1961:63–66) emphasised the unavoidable role of personal factors in observation. He holds, for instance, that desires, appreciation and enthusiasm should play their rightful role, that scientists' talents and predispositions should be utilised to the optimum, and that observation should be guided by prior knowledge.

Although Stoker did not develop this discussion much further, it does point towards a critique of what Strauss (2001:24) calls the misplaced ideal of objectivity. With Stoker's positive acceptance of the place of the human subject, subjectivity can be recognised as a constitutive element of science, rather than a contaminating one. Moreover, this opens up the possibility of judging concrete instances of subjective actions against normative standards; in other words, the possibility of determining whether an action is norm-conforming or not. Arbitrariness, for example, is an anti-normative form of subjectivity.

Stoker's (1961:65–66) awareness of the influence of world views and perspectives on science and of the role of presuppositions in observation can be seen as a third way in which he opposes the neutrality of scientific methods. He contends that the question of which of the almost infinite observations are to be regarded as scientifically relevant, and which ones are not, is partly determined by these factors. In other words, researchers need some framework to guide them in their selection of observations.

In the fourth place, Stoker's discussion of specific methods brings to light their interconnectedness or complementarity. He asserts (1961:90) that the method of inductive hypothesis verification utilises, within its respective steps, the methods of generalising induction, analogical induction and deduction. In this example, the complementarity of some methods lies in their composite nature, in the sense that these methods are comprised of other simpler methods or include another method as one of their steps.

Another way in which methods are complementary can be shown through an example also taken from his discussion of specific methods: the intimate relation between the method of definition and that of classification. According to Stoker

(1961:73), definition can determine the principle of division required for classification, while a class definition is fully dependent on a particular classification (Stoker, 1961:69). The kind of complementarity described here is one of mutual dependency between two methods, viz. that of classification and definition.

Just like the multiplicity of methods, their complementarity suggests a methodological position contrary to that of methodological scientism and other versions of methodological monism.

An analysis of the nature of method

Let us explore a third methodological area in which Stoker contributed, namely his analysis of what methods are. According to Stoker:

a method is a responsible and intentionally planned way of human action, with which a pre-determined purpose (the terminal pole) is achieved by manipulating the “subject-matter” concerned according to its nature (the starting pole). (Stoker, 1970b:189)¹³

Venter (1981:502) rightly maintains that Stoker managed to correctly capture the nature of methods. Comparing the correspondence of the etymological meaning of the term ‘method’ with several definitions of it found in contemporary dictionaries provides strong support for this claim. Caws (1967:7:339), for instance, states that ‘the term “method”, strictly speaking, “following a way” (from the Greek μέτα, “along” and ὁδός, “way”) refers to the specification of steps which must be taken in a given order, to achieve a given end’. The phrases ‘following a way’, ‘a planned way of action’ and ‘specification of steps in a given order’ all point towards the same core element of method.

Another facet of method that Stoker legitimately emphasised is its ‘middle character’ (Venter, 1981:506). The Afrikaans word ‘*middel*’ has the dual connotation of being a means to an end as well as of being situated in-between. According to Stoker, a method links two poles, namely the starting pole and the terminal pole. The terminal pole is the ‘given end’ (cf. Caws’ description) or the pre-determined purpose (cf. Stoker’s definition) that one aims at achieving. The starting pole is the subject matter, or within the context of science, the knowable. Venter (1981:504–505) has also described the starting pole as a situation that is worthy of change (the problem) or the situation in which non-actualised possibilities are still locked up.

¹³ See also Stoker (1961:51; 1970b:189).

This definition can be applied to all sorts of methods; from methods for pruning trees and rock climbing, to the methods used in scientific research. A description that is more attuned to scientific method requires only the qualification that the starting pole of scientific method be more closely specified as the *scientifically* knowable and its terminal pole as *scientific* knowledge. Stoker's (1970b:189–190) further stipulation that a scientific method is a technique does, however, require more critical reflection. We will return to this topic later on. The discussion for now will continue to focus on Stoker's definition of method in general.

Building on the idea of the 'middle character' of methods, Stoker explored the implications of seeing method as positively determined, as well as negatively limited, from both sides simultaneously. Stoker stated the inferences thus drawn as principles and/or norms holding for the choice and use of methods. It is not clear for some of these inferences whether they really are norms or principles. In those instances, they will not be stated as such. Additional comments will also be made, some in order to expand on what Stoker said, and others in a more evaluative way.

Regarding the positive determination of method by its two poles, Stoker stated that in science a method should be suited to what is being investigated, as well as to the kind of knowledge being aimed at. It should be suited to both poles. Without losing sight of the purpose of method, Vollenhoven (2005:95–96) expressed this basic idea of the suitability of method to its subject matter more strongly by saying that:

Method should be discovered in a lawful way, i.e., *it should arise from working with the matter itself*. In fact, that matter remains recalcitrant so long as it is not examined in a manner fitted to its nature (...)

Method [should] *conform itself aboriginally and consistently* to the matter under examination.

Even more than mere method selection, the norm of suitability is thus also a matter of designing and continuously reforming methods in conformity with the nature of the subject matter at hand.

A second inference from the positive determination of method from both poles is the acceptance of a multiplicity of methods in science. Stoker's survey and classifications of methods used in scholarship have already suggested method plurality (see previous section). His analysis of the nature of method also enabled him to root method plurality in a non-reductionist ontology. If scientific methods are to conform to the knowable, and if there is a rich diversity within this knowable, then it follows that a diversity of methods should in principle also be acknowledged. The same goes

for a diversity of aims in science requiring different methods suitable for attaining them. (Stoker, 1970a)

One should, however, be careful not to jump from the acceptance of method plurality in principle to the declaration that various methods are in principle equal, as Stoker seems to have done. According to Stoker (Stoker, 1970a), 'mutually irreducible methods are in principle equal' and 'the principial equality of mutually irreducible methods deserves full recognition'. Although the God-given diversity within creation can serve as a basis for holding method plurality, the rich diversity of methods themselves was not created by God. As human artefacts, some methods truly are better designed and more suitable than others.¹⁴

In the third place, Stoker (1970a) inferred the complementarity of methods from the coherence of the knowable, as well as the coherence of the different purposes for which methods are intended. The complementarity of methods is therefore determined from both poles in unison. The idea of complementarity has already emerged from Stoker's discussion of specific methods. In the previous section of this article it was stated that methods can complement each other in the sense that some methods may consist of other methods, and that methods are often interdependent. Stoker's view of complementarity further implies that methods ought not to be used in an isolated fashion. The extent to which the complementarity of methods provides a theoretical basis for multi-method research could also be explored.

As a fourth implication, Stoker states that methods are not religiously neutral. A method cannot be isolated from its two poles, and is instead partly determined by our presuppositions regarding these two poles. Assuming that, from a reformational perspective, some of these presuppositions are religious in nature, Stoker is justified in rejecting the religious neutrality of methods. Acknowledging the normative dimension of methods (see the next section) is an additional and of course related reason for positing a religious influence on methods.

The four methodological propositions discussed above ensue from the positive determination of method by its starting and terminal poles. A fifth proposition follows from what Stoker (1970a) saw as the 'negative' limitation of method by its two poles. By this he meant that method is dependent on both poles, which implies

¹⁴ Nevertheless, Stoker's intention here of guarding against an undue favouring of natural scientific and quantitative methods can be appreciated.

that the significance attributed to method should never overshadow its purpose or the subject matter to which it is applied. In other words, method is nothing more than a means to an end.

The knowable and the purpose of knowing should be decisive, and not the method. This is in sharp contrast to the dominant methodological convictions that Stoker encountered during his early formation as a philosopher in Germany. There, it was the chosen methodology that determined the subject matter of psychology to be investigated, rather than the other way around. Undoubtedly Stoker had this and other instances of overestimating the significance of method in mind when he developed his own methodological views. Figure 1 below summarises the results of Stoker's analysis of the nature of method.

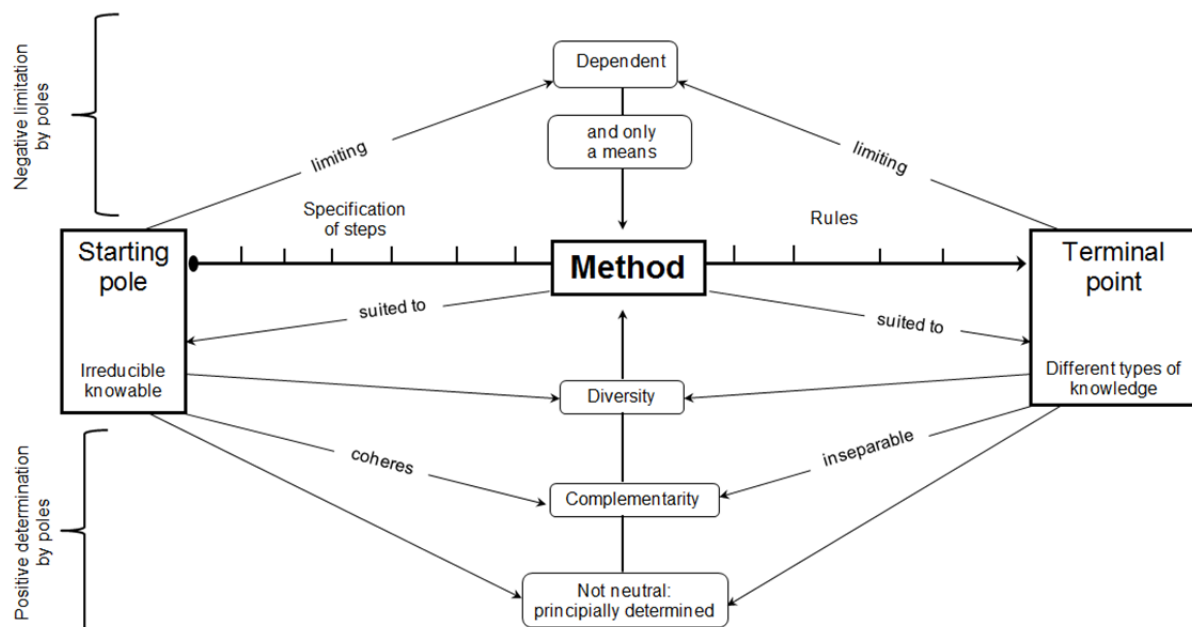


FIGURE 1: A representation of Stoker's analysis of method

A few critical notes

The implication of method being merely a means to an end can be explored further. If scientific method is solely a means of obtaining scientific knowledge, then method should not occupy a central place in the definition of science or serve as a criterion for demarcating science from non-science. Similarly, method should not serve as the

criterion for demarcating the tasks¹⁵ and fields of the various academic disciplines. That is not its proper function.

Still, in Stoker's definition of science, method occupies centre stage. He (1970b:184) held that 'science may be described to be knowledge as such, that is (as much as possible) *technically verified* and (as much as possible) *technically systematised*'. A technique¹⁶ is simply a kind of method. The two characteristics mentioned in the definition, namely verification and systematisation, are thus suggested to be methodical especially in science. In other words, method is seen by Stoker as the distinguishing mark of science,¹⁷ at least in so far as he believed that science can be distinguished from non-science.¹⁸

Moreover, verification techniques and systematisation reflect something typical of natural scientific rationalism and metaphysical rationalism respectively. These are the two competing traditions that, according to Van Belle, were especially preoccupied with methodological issues. As we have seen, Stoker was initially exposed to their influence. Stoker combined a prominent feature of each tradition in one definition. On this particular point, then, it seems that he did not succeed in throwing off the influence of a heritage in which the significance, place and role of method was overestimated.

In addition, identifying scientific method as technique¹⁹ unduly limits the range of methods that can be considered scientific. Venter (1981:508) correctly observes two conditions for a method to be regarded as a technique. The first condition is an acquired pattern of action or a skill obtained through practice. The second is that the subject matter should be of such a nature that it allows a connection between actions

¹⁵ This point applies to Stoker's view according to which scholarly Bible exegesis is the exclusive prerogative of theology (see Van der Walt, 2016:4).

¹⁶ A technique can be defined as a kind of method that ensures a high probability of accomplishing an end whenever there is a skilful execution of the required sequence of actions. Compare also Stoker (1970b:190) and Venter (1981:507–508).

¹⁷ Also with the positivist principle of verification, and with Popper's (1974:37) idea of falsifiability, was method taken to serve as the demarcation criterion of science. Verification and falsification are linked respectively to the methods of induction and deduction.

¹⁸ Stoker (1961:135–138) held that a 'sharp boundary' cannot be drawn between what is pre-scientific and scientific, but that a distinction between them that is as clear as possible should nonetheless be provided. He rejected several prospective candidates on the basis that they indicate only relative differences between science and non-science. Stoker's choice of method, verification and systematisation, which are not unique to science either (Strauss, 2009:46), but at best only indicate differences in degree, therefore seems equally unsuitable.

¹⁹ Stoker (1970b:189–190) explicitly stated that "a scientific method is a... technique..."

and consequences with relatively little variation. Such predictable regularity is much rarer in the humanities than in the natural sciences. The stress on technique in Stoker's definition, therefore, harbours a predilection for natural scientific methods.

Another undesirable consequence of Stoker's (1961:134–138) definition of science in terms of technique, verification and systemisation is the implicit sense in which scientific knowledge is potentially more certain, reliable, true and coherent than non-scientific knowledge. Granted, by elaborating what he meant with the phrase 'as much as possible' in his definition, he emphasised limitations of scientific knowledge. Stoker's intention was definitely not to contend for the superiority of scientific knowledge. He was not an adherent of scientism. But although the phrase 'as much as possible' may suggest an ideal that is not absolutely attainable, it also entails the idea that science aims higher.

Deontology of scientific method

The fourth area in which Stoker (1970b:181–184, 191–195) made methodological contributions is his so-called deontology of scientific method. 'Deontic determinants' for Stoker refers to what humans ought to do in a broad sense, so that deontology entails more than merely moral duties. 'Deontic determinants' meant for Stoker the same as 'norms' in reformational philosophy. In other words, it refers to all the different kinds of laws with a normative character.²⁰ Accordingly, Stoker (1970b:191–194) identified several norms relevant to method, for example the norms of relevancy (or suitability), efficiency, and economy.²¹ He also mentioned lingual, ethical and juridical norms. These norms are clearly modal norms, in the sense that they have their seat in different irreducible law spheres or modalities.

Defining methods as 'responsible ways of human action', as Stoker did, implies a call to respond to given norms holding for methods. Two questions in this regard posed by Stoker (1970b:184) are: 'What method *ought* he [i.e. the scientist] to choose and how *ought* he to apply it?'²² We could add to the choice and use of method that

²⁰ According to Strauss (2001:23), it is the nine aspects that are listed after the sensitive-psychical aspect that display a normative character. Stoker (1961:166), however, did not accept the historical and social as distinct aspects.

²¹ Venter (1981:509–512) also added accuracy, completeness, clarity and contextualisation as norms valid for scientific methods.

²² Emphasis in the original.

also their design is subject to a variety of norms. A third question to be asked then is: 'How ought methods to be *designed*?'

Stoker thus opened up the possibility of recognising and exploring the full diversity of methodological norms, as well as the three different ways in which methods are subject to them (viz. the choice, use and design of methods). In this way, he contributed immensely to the disclosure of the normative dimension of methods.

Systematic considerations

On a more critical note, it is necessary to reflect on Stoker's idea that there should be a family of sciences, called 'deontology', with the purpose of exploring all normative determinations. Stoker's classification of deontics also requires scrutiny, since it may be indicative of an objectivist inclination.

First, regarding Stoker's proposal of deontology as a family of sciences: From a study based on intensive interviews with Stoker, and reviewed by Stoker himself for accuracy (see Stoker Jnr, 1983:5, 21), it is clear that the family of deontological sciences was meant as a new addition to the other disciplines, with which they would be 'intertwined'. Since the special sciences of the humanities, for instance, already have the task of exploring their respective kinds of modal norms (e.g. economics explores economic norms), Stoker's proposal raises the suspicion of duplication.²³

In order to prevent unnecessarily duplicating the tasks of other disciplines, a new division of tasks could, for argument's sake, be based on the distinction between the norm side and factual side of reality. The deontological sciences are, after all, described as transecting all the other sciences. If the study of all normativity is then accordingly allocated to the deontological sciences, what would that mean for the other disciplines? Would they be non-deontological sciences – in other words, disciplines not concerned with normativity? What, for example, would the purpose for logicians be in investigating factual patterns of thought if this were not also

²³ Stoker's idea of transversal sciences is, in my view, a similar instance of an unnecessary duplication of scientific disciplines. He believed that transversal sciences are necessary to deal with questions that all the individual sciences have in common. Philosophy is, however, ideally suited for this purpose if it is seen as an overview science as Stoker himself did. Stoker's proposal of transversal sciences would not only require philosophy to relinquish epistemology, the theory of science and methodology, but would possibly also deprive philosophy of a domain of its own. See Van der Walt (2016:4).

directly related to the study of logical norms (i.e. the laws of logic)? In light of the coherence of the factual and normative sides of reality, the idea of having a distinct domain of deontological sciences does not seem very promising, especially if the intention is to open up the normative dimension of disciplines.

Second, Stoker's (1970b:183) division of norms into general and contingent deontics raises some difficulties. As may be expected, 'general deontics' has reference to those norms that have some universal scope. As Stoker put it, 'they hold good (*wherever relevantly applicable*) for *all* men, at *all* times and circumstances'. This limited scope of universality should not be identified with the specified universality of type laws,²⁴ since Stoker does not appear to operate with the distinction between modal laws and type laws. By way of illustration, he mentioned 'general norms (or laws) of thought, language and art, of rights, ethics and religion; those of communities and societies; and those of labour, technique, education and so forth'. This range of examples does not unambiguously point towards either modal laws or type laws.

'Contingent deontics', however, is a misnomer, since it is not the norms themselves that are thought to be contingent. In other words, 'contingent' is not meant by Stoker as an adjective of the norms that are in view, but rather refers to factual reality in its unrepeatability, unpredictability and uniqueness. In a counter-intuitive way, contingent deontics are said to be universal, even though the scope of their validity is also limited, perhaps even more so than with general deontics. Moreover, the fact that the denotations 'general' and 'universal' are synonyms does not help the purpose of clarification.

A difficult question to consider regarding Stoker's proposal of contingent deontics is whether the uniquely individual does not perhaps transcend the limits of science, and therefore of his suggested deontology? Hart, who is sympathetic to Stoker's concern for the particularity of individuals, argued that it does. This is more or less what Hart (1994:569) meant when he stated that 'our knowing of the different must be a knowing that differs from knowing the same'.

Even if we could know the uniquely individual in a scientific way, whether there really is a separate set of norms for the uniquely individual is not clear. Stoker's (1970b:183) case for this is not compelling. The first example of a contingent deontic

²⁴ Whereas modal laws hold for all possible entities, so that there is no specification or restriction to their universal validity, type laws only hold for a limited class of entities (Strauss, 2009:79).

he gave is a proverb²⁵ from Ecclesiastes 9:10 which bids us to vigorously seize the opportunities that come from God's hand. Although doing so in obedience to God's law is implied, the instruction does not have anything special to do with contingency. The second example he gave relates to dealing with dilemmas.²⁶ Neither this example, nor the list of rhetorical questions meant to illustrate factual 'contingencies' in history (see Stoker, 1970b:194), entails a set of norms specifically for contingencies.

One gets the impression that the division of norms into general and contingent is based on some confusion between norms, and the unique circumstances or historical contexts ('contingencies') that require different ways of giving positive shape to those norms. Why was there a preference in the Middle Ages for methods used with regards to qualitative and teleological problems? Why is there a preference in modernity for methods regarding quantitative and causal problems? Why did psychology branch off from philosophy at the time it did? To the extent that these questions of Stoker are related to norms holding for methods, they can be addressed with the idea of positivisation.

Third, Stoker's (1970b:191) division of general deontics of scientific method into formal, intrinsic and transcendent norms requires closer scrutiny. What Stoker (1970b:192) called 'formal norms' are related to the 'general "nature" of scientific method'. In other words, they are derived from the definition and the analysis of the nature of method. The whole structure of 'starting pole – means – terminal pole' is involved, hence Stoker's qualification of 'general' in reference to the nature of method. These 'formal norms' reflect a particular methodological perspective that is shaped by the inferences or propositions discussed in the previous section. There it was suggested that the multiplicity and complementarity of methods, as well as the fact that method is only a means or a tool, should rather not be presented as norms.²⁷

The second set includes norms that are related to method as a means. Since Stoker (1970b:192, 1961:104) called these norms 'intrinsic' to method and referred to them as methods' own norms, the intention presumably is to relate them to the core or essence of method and not to method's whole structure of 'starting pole – means –

²⁵ The proverb is 'Whatever your hand finds to do, do it *with all your might*'.

²⁶ Stoker's (1970b:184) formulation is as follows: 'Whatever carries the greater weight deontically ought to be done.'

²⁷ Stoker (1970b:192) presented these inferences as the formal norms of diversity, of complementary correlation and of means respectively.

terminal pole'. If this interpretation is correct, it would have made more sense for Stoker to have presented intrinsic norms as a subset of formal norms and not as the second main set alongside it.²⁸

Stoker's (1970b:192) name and explanation of the third set of norms completes the picture. These norms are seen as external to the core nature of method and are therefore called 'transcendent norms'. They are external to method as a means in the sense that the outcome reached with the application of method is 'deontically loaded'. The emphasis here is thus only on the terminal pole or 'external' part. As Stoker stated: 'But the ends or purposes, *taken by themselves*, are (...) subject to norms.'

Being external to the core nature of method, he thought of them as holding for the end results aimed for and not for method as such. The linguistic formulations of the results of our scientific research should, for instance, be 'unambiguous, distinct, precise and economical'. Besides the fact that most of these norms mentioned by Stoker do not have their seat in the sign mode, and are therefore not linguistic norms,²⁹ they are not even presented as norms for methods. Remarkably enough, Stoker still called them 'linguistic norms of scientific method'.

See figure 2 below for a graphical representation of Stoker's division between formal, intrinsic and transcendent norms.

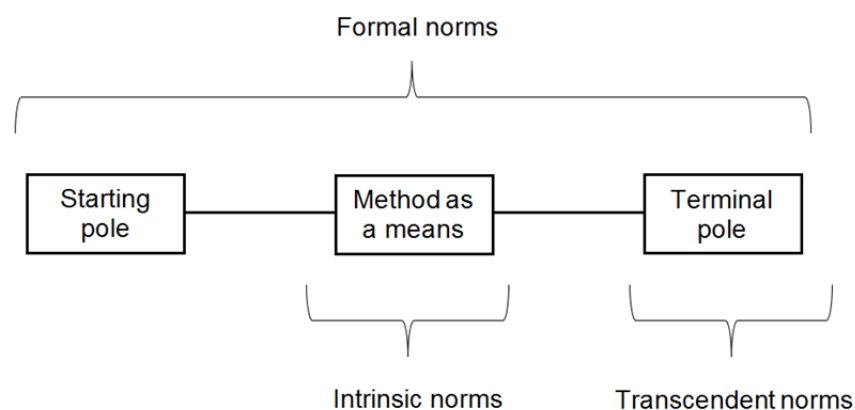


FIGURE 2: Stoker's formal, intrinsic and transcendent norms

²⁸ Such an interpretation is especially supported by the fact that Stoker (1970b:192) listed 'the norms of means' as a formal norm.

²⁹ Here we see a lack in clarity regarding the entitary and aspectual dimensions of reality due to a fondness for the object. The nature of an object or entity, in this case a sentence that is centrally characterised by the sign mode, incorrectly determines the nature of the other aspectual norms holding for that entity, so that analytic and economic norms are seen as being linguistic norms.

The picture that emerges, albeit vaguely and inconsistently, is an objectivist approach in which the object (in this case, method) and its internal nature is the source of law.³⁰ The partial manifestation of objectivism may be due to Stoker's (1967:238–243) use of the phenomenological method of *Wesensschau*, or as he later preferred to call it, the 'diaphanerotic method'.³¹ The purpose of the method is to pierce through the accidental and changeable to the essential or fixed. The aim is to bracket the knowing subject as far as possible and to allow the 'thing' to reveal itself. The motto is 'to the things themselves' (*zu den Sachen selbst*).

Notwithstanding Stoker's (1970b:417–418) claim³² to the contrary, this method does not seem to have been successfully disentangled from the presuppositions upon which Scheler and Husserl founded it. The dilemma of either opting for objectivism or subjectivism, as well as the constancy-change and inside-outside oppositions, for instance, is still evident in Stoker's own description of the diaphanerotic method. So is the bracketing of the incidental characteristics of a thing (Stoker, 1967:238–243).

Methods as historically qualified artefacts

A modal analysis of method could be an alternative approach to an objectivist one that attempts deriving norms from the core nature of objects. Such an analysis would entail a characterisation of method as an entity that, actively or passively, functions in all aspects. The various modal norms, to which methods are subject, can be opened up and identified, as Stoker has already shown to some extent, but without artificially classifying them in inner or outer terms. Examples of modal norms can include the norms of accuracy (analytical), suitability and effectiveness (respectively spatial and physical analogies in the historical aspect), clarity (sign mode), economy (economic), impartiality (jural) and reliability (certitudinal).

As briefly mentioned before, there are norms holding for the design of methods, no less than for their selection and application. These norms exist since the process of devising methods is not simply dictated by sensory instinct. Methods are formed by conscious planning in a normative or anti-normative way. Admittedly, some human

³⁰ See Clouser (2015:247) for a discussion of objectivism and subjectivism as positions in which the source of order is located in the object and the subject respectively. The alternative, which is explored in reformational philosophy, is to acknowledge a distinct law side to reality. Entities and the relations between them are subject to these laws.

³¹ From *dia*, meaning 'through', and *phanerosis* meaning 'the revealed'.

³² As far as I can tell, Stoker did not provide much support for this claim.

actions may be sensory guided, but such action patterns are themselves not methods.³³ The process of forging methods is therefore subject to historical norms valid for human formative power and not simply determined by sensory-psychical laws.

Being cultural artefacts, the development of which is governed by historical norms, methods' foundational function can be identified as historical. Since methods are tools (metaphorically speaking), the purpose of which is in turn to produce other artefacts, such as theories,³⁴ method's leading function is historical as well. Such dual qualification of method as historical is also true of some tools (e.g. pliers, theodolites, screwdrivers, glue guns, etc.) that have a historical foundational and leading function (Clouser, 2005:266).

A modal analysis of methods as historically qualified artefacts also needs to examine whether there is a distinct type law for methods. Presuming for the time being that there is one, I would suggest that i) the subject matter and ii) the aim of methods are themselves not part of the universal structure of method, even though they do determine variations within the parameters of this universal structure. This may mean that different type laws need not necessarily be assumed for different sorts of methods, and especially that there is no difference in kind between scientific and non-scientific methods.

The following description aims at capturing the universally shared characteristics of methods and is tentatively proposed as possibly reflecting their type law:

A method is a means to effectuate an objective when suitably applied to a subject matter according to a plan and rules that specify the sequence of distinctive steps or actions to be taken.

Whether a plan and rules, as well as a sequence of actions, are uniquely shared features of methods, can only be determined once they are tested against diverse instances of what we normally regard as methods. Such testing in itself will, however, not yet settle the question of whether there indeed is a distinct type law for method.

³³ Nor, for that matter, are any actions identical to the method concretised by them. See also Stoker (1970b:188).

³⁴ See Stafleu (1981; 1982) for a development of the thesis that a theory is a logically qualified artefact.

Conclusion

This article attempted to show that there is much to gain from Stoker's theoretical reflections on scientific methods. Stoker's reflections point towards a methodological position that on the one hand embraces method plurality and complementarity. On the other it rejects the neutrality of methods and resists methodological scientism and monism. His analysis of the nature of method in terms of its 'middle character' further supports such a methodological position and even connects it to a non-reductionist ontology. His insistence that method is nothing more than a means to an end and his exploration of the normative dimension of methods is valuable.

At the same time, there is also a need for further reform. As seen in Stoker's view of science and scientific method, he did not fully cast off the heritage that misconstrued method as more than merely a means. In line with his intention, the normative dimension of methods should more explicitly be shown to include the design of methods, in addition to our choice and use of them. It is doubted, however, that the proposal of a family of deontological sciences would be conducive to the disclosure of the normative dimension of reality, and thus also of methods. Furthermore, Stoker's division of deontics into general and contingent indicates some lack of clarity regarding certain systematic considerations and possibly overlooks the concept of positivisation.

Instead of a more objectivist-inclined analysis, a modal analysis of method is suggested in order to do full justice to the normative dimension of methods, both in terms of the correct identification of modal norms, and in the sense that their design is subject to norms. It is exactly insight into the historical qualification of method that accentuates norms holding also for the process of their formation. Finally, a distinct type law for method may need to be postulated. To this end, a description of method, intended to reflect the universal structure of method, was tentatively proposed. Further research in this regard is needed, however.

Appendix

First principle of division: Scientific methods according to the origin, nature and purpose of science

Level 1	Level 2	Level 3
Origin of science	Methods of problem discovery	
	Methods of problem formulation	
Nature of science	Methods of verification	Grounding methods Methods of proof
	Methods of systematisation	Methods according to the relation and coherence of <i>idions</i> ³⁵
		Methods according to the relation and coherence of concepts, judgements and deductions
		Methods that combine both the above-mentioned into theories
Purpose of science	Methods regarding the knowable	Methods with the aim of knowledge of <i>idions</i>
		Methods with the aim of knowledge of laws
	Methods regarding knowing	Methods of comprehension
		Methods of description
		Methods of explanation
		Methods of evaluation

Second principle of division: Logical and language methods

Level 1	Level 2
Logical methods or methods of thought	Methods of concept formation
	Methods of definition
	Methods of logical analysis
	Methods of logical synthesis
	Methods of immediate deductions
	Methods of mediate deductions
Methods regarding the use of language	Methods of naming
	Methods of formulation

³⁵ In *Principles and methods in science*, Stoker (1961:60) still used the word 'data' ('*gegewens*' in Afrikaans). Later on, he (1967:134; 1970b:337) used '*idion*' as an alternative to 'data', 'objects', '*Gegenstände*', 'phenomena' and 'things'.

Third principle of division: Methods of perceiving, processing and addition

Level 1	Level 2	Level 3	
Methods of perceiving (<i>ontwaring</i>) the knowable	Methods of (sensorial) perceiving		
	Methods of psycho-introspection		
	Methods of psycho-extrospection		
	Methods of dynamic awareness of resistance		
	Methods of evaluation		
	Methods of intuition		
	Methods of religious faith		
Methods of processing (<i>verwerking</i>) the knowable	General methods of processing (<i>verwerking</i>)	Methods of distinguishing the knowable	
		Methods of comparing the knowable	
		Methods of selecting the knowable	
		Methods of collecting the knowable	
		Analysis of the knowable	
		Synthesis of the knowable	
		Methods regarding visions of unity	
	Methods regarding visions of perspective		
	Specific methods of processing (<i>verwerking</i>)	Empirical methods	
		A priori methods	
		Hermeneutical methods	
		Methods of evaluation	
	Methods of addition (<i>bywerking</i>)	Speculative methods	
		Methods of construction	Analogical constructions
Postulatory constructions			
Extrapolation			
Inter- & intrapolation			

Fourth principle of division: Intra- and inter-scientific methods

Level 1	Level 2	Level 3
Dialectical methods	Method of discourse	
	Method of unmasking pseudo proofs	
	Method of eliminating antinomies	
	Method regarding hyperdoxical ³⁶ thinking	
Methods of scientific critique	Presuppositional & foundational critique	
	Immanent critique	
	Transcendent critique	
	Transcendental critique	
	Negative & positive critique	
	Formal & material critique	
	Critique of method	
	Essential & incidental critique	
	Subject & personal critique	
Self-critique		
Methods of cooperation and reciprocation	Methods of delineation	
	Methods of cooperation	
	Methods of reciprocation	
	Methods of struggle against opposing starting points	Eclectic, syncretistic & exheretical methods
		Methods of apologetics
	Methods of elenctics	

³⁶ In *Principles and methods in science*, Stoker (1961:60) still used the word 'paradox', but he later substituted it with 'hyperdox'. According to Stoker (1971:73), a hyperdox is a truth that surpasses human understanding.

References

- Beijk, A.A. & Van der Merwe, N.T., 1994, 'H.G. Stoker as student: die wysgerige denkklimaat en akademiese wisselwerking met Scheler en Buytendijk', *Koers – Bulletin vir Christelike Wetenskap*, 59(3&4), 501–528.
- Caws, P., 1967, 'Scientific method', in *The encyclopedia of philosophy*, vol. 7, MacMillan Publishing & The Free Press, New York.
- Clouser, R.A., 2005, *The myth of religious neutrality: an essay on the hidden role of religious belief in theories*, rev. edn., University of Notre Dame Press, Notre Dame.
- Feyerabend, P., 1978, *Against method: outline of an anarchistic theory of knowledge*, Verso, London.
- Hart, H., 1994, 'Knowing *other-wise*: a discussion of alterity and the limits of philosophy', *Koers – Bulletin for Christian Scholarship*, 59(3&4), 569–586.
- Popper, K.R., 1974, *Conjectures and refutations*, 5th edn., Routledge & Kegan Paul, London.
- Raath, A.W.G., 1994, 'Soli Deo Gloria: die lewe en werk van prof. dr. H.G. Stoker (4 April 1899 – 16 Mei 1993)', *Koers – Bulletin vir Christelike Wetenskap*, 59(3&4), 343–361.
- Spykman, G.J., 1985, *Spectacles: biblical perspectives on Christian scholarship*, PU for CHE, Potchefstroom.
- Stafleu, M.D., 1981, 'Theories as logically qualified artefacts (I)', *Philosophia Reformata*, 46(1):164–189.
- Stafleu, M.D., 1982, 'Theories as logically qualified artefacts (II)', *Philosophia Reformata*, 47(1):20–40.
- Stoker, H.G., 1933, *Die slakkehuisteorieë van die bewussyn of iets oor die wese van die bewussyn*, De Bussy, Pretoria.
- Stoker, H.G., 1961, *Beginsels en metodes in die wetenskap*, Pro Rege Uitgewers, Potchefstroom.
- Stoker, H.G., 1967, *Oorsprong en rigting, band 1*, Tafelberg Uitgewers, Kaapstad.
- Stoker, H.G., 1970a, 'Een en ander oor metode', openingsrede gelewer tydens die kongres van die S.A. Vereniging ter bevordering van Wysbegeerte gehou te Mazelspoort, in *Uit, deur en tot God is alle dinge: werke van Prof. Dr. H.G. Stoker*, CD, Vereniging vir Christelike Hoër Onderwys, Bloemfontein.

- Stoker, H.G., 1970b, *Oorsprong en rigting, band 2*, Tafelberg Uitgewers, Kaapstad.
- Stoker, H.G., 1971, 'Reconnoitering the theory of knowledge of Prof. Dr. Cornelius van Til', in E.R. Geehan, (ed.), *Jerusalem and Athens: critical discussions on the theology and apologetics of Cornelius van Til*, pp. 25–71, Presbyterian and Reformed Publishing Company, Philadelphia.
- Stoker, H.G. Jnr., 1983, *Die vraagstuk van deontologie in die filosofie van HG Stoker*, MA Verhandeling, Fakulteit Lettere en Wysbegeerte, PU vir CHO, Potchefstroom.
- Strauss, D.F.M., 1994, 'Besit wetenskaplike metodes wysgerige grondslae?', *Tydskrif vir Christelike Wetenskap*, 30(1):97–128.
- Strauss, D.F.M., 2001, 'Does it make sense to distinguish between the natural sciences and the humanities?', *Journal for Christian Scholarship*, 37(1&2):15–26.
- Strauss, D.F.M., 2009, *Philosophy: discipline of the disciplines*, Paideia Press, Grand Rapids.
- Van Belle, H.A., 2014, *Explorations in the history of psychology: persisting themata and changing paradigms*, Dordt College Press, Sioux Center.
- Van der Merwe, N.T., 1993, 'In memoriam: Prof. Dr. H.G. Stoker (4/4/1899–16/5/1993)', *Philosophia Reformata*, 58(2), 95–97.
- Van der Walt, M.F., 2016, 'Critical reflections on H.G. Stoker's (1899–1993) approach towards the elaboration of a Christian philosophy', *In die Skriflig/In Luce Verbi*, 50(1), a2040. <http://dx.doi.org/10.4102/ids.v50i1.2040>.
- Venter, J.J., 1981, *Geloofsgebonde denke by Anselmus: 'n studie van sy wysgerige metode*, PhD Proefskrif, Fakulteit Lettere en Wysbegeerte, PU vir CHO, Potchefstroom.
- Vollenhoven, D.H.Th., 2005, *The problem historical method and the history of philosophy*, K.A. Bril, (ed.), Transl. R. Sweetman, De Zaak Haes, Amstelveen.

Conclusion

In this dissertation, we reflected critically on the approach H.G. Stoker followed as he pioneered an integral Christian philosophy, after which we explored the methodological contributions he made as a reformational philosopher.

Objectives of the first article

Identifying Stoker's approach

After analysing, in the first article, Stoker's work on the encyclopaedia of the sciences and his ontology, it was argued that he opted for a theology-based approach. This is the case notwithstanding the fact that he denied doing so. The approach is evidenced in his philosophy by a stronger association between theology and the Bible, as well as by granting theology an intermediary and foundational role and giving it an elevated status among the other disciplines.

On the one hand, Stoker was driven by the ideal of integral Christian scholarship. He criticised the assumption that non-theological scholarship is religiously neutral and argued for the legitimacy of the Bible as a source of knowledge for all disciplines. On the other hand, however, he continued to defend a position in which the Bible and certain religious beliefs are effectively annexed by theology.

Stoker thus modified the theology-based approach slightly to bring it more in line with an integral Christian philosophy instead of simply rejecting such an approach. This demonstrates his commitment to a view that requires theology to be the key factor in Christian scholarship.

A critique of Stoker's approach

Stoker's theology-based approach was furthermore criticised by pointing out some difficulties it leads to in terms of accounting for non-Christian theology and the placement of ouranology within his encyclopaedia of the sciences. Coming more to the heart of the matter, it was suggested that these difficulties are symptomatic of i) structure and direction being conflated and of ii) the influence of the nature and super-nature pattern of thought.

Stoker couldn't, in terms of his own system, accord to Christian and non-Christian theologies the same structural field of research. He also could not acknowledge the legitimacy of non-Christian theology in an unambiguous way. Such conflation of structure and direction can be associated with the tacit acceptance of the assumption that it is the object of human contemplation that makes such intellectual reflection Christian. In other words, it is assumed that theocentric thought necessarily is Christian in character and it is naïvely taken for granted that (legitimate) theology necessarily must be Christian in its religious direction.

The theme of nature and super-nature in turn puts the ideal of an integral Christian philosophy (and scholarship in general) at stake. The reason for this is that if Christian philosophy is to be considered distinct from natural theology at all, it must 'perspectively' approach the cosmos apart from its relation to God. In order to recover the possibility of a Christian perspective of the cosmos, a ploy is needed, such as borrowing belief-content from theology. In the process, these borrowed beliefs are then confusedly also designated as 'theological truths'.

Making Stoker's philosophy more intelligible

Some oddities within Stoker's philosophy, such as his endeavour to develop an integral Christian philosophy while maintaining the view that theology is the 'queen of the sciences', are now more intelligible. These oddities should be understood within the context of Stoker's attempt to somehow reconcile a dual commitment to reformed scholasticism and reformational philosophy. After all, nature and super-nature is a pattern of thought that also serves as a method of synthesis; in other words, as a way of establishing pseudo congruency. Positive reception of such an approach will not easily be found among those who believe that the liberation from scholasticism is a prerequisite for the advancement of an integral Christian philosophy. Still, Stoker should be presented in a way that does full justice to his lifelong pioneering work for a Christian philosophy within the Calvinist tradition.

Objectives of the second article

In the second article, I explored and evaluated the contributions Stoker made to the theory of method.

A backdrop to Stoker's contributions

Early exposure to the rival positions of natural scientific rationalism (cf. positivism) and metaphysical rationalism (cf. anti-positivism) surely made Stoker aware of the danger of over-estimating the role of methods in scholarship. Although critical of such over-estimation, the mark left by natural scientific rationalism on Stoker is still visible in his use of the phenomenological method and in his identification of scientific method with technique. Furthermore, Stoker's combined emphasis on verification and systematisation reflects something typical of each of the two traditions.

Stoker's valuable contributions to methodology

Stoker's theoretical work on methods, especially his analysis of the nature of method in terms of its 'middle character', supports a methodological perspective that accords well with a non-reductionist ontology. In addition to being critical of 'method favouritism' and various forms of methodological monism, it is a perspective in which the acknowledgement of method plurality is advocated. The perspective also potentially provides a theoretical basis for multi-method research in the way it embraces the complementarity of methods. Through the 'middle character' of method, Stoker furthermore highlighted the limited role and place of method in science as nothing more than a means. It was noted, however, that the implications of a more modest status for methods have not fully crystallised in Stoker's own view of science and scientific method. Finally, his contributions also include a valuable exploration of the normative dimension of methods.

The normative dimension and artefactual nature of methods

Stoker's intention of disclosing the normative dimension of method can be appreciated. For him, the normative dimension embraces a greater modal diversity than merely the ethical. It was questioned, however, whether his proposal of a distinct family of deontological sciences would help open up this dimension. Greater clarity regarding systematic distinctions, as well a more accurate identification of modal norms, is also required.

A modal analysis of methods as historically qualified artefacts was suggested as an alternative to Stoker's approach that appears to have a sort of objectivist tendency. That methods are human artefacts and as such cannot be declared as in principle equal needs to be asserted clearly. The identification of methods as artefacts with a

historical qualification can better highlight the validity of norms holding also for the design and formation of methods.

Finally, a tentative approximation of the type law for methods was proposed. Further research that empirically tests this proposal against an array of methods is invited.



APPENDIX 1

Requirements for submitting research articles to *In die Skriflig* / *In Luce Verbi*

New submission

This page includes instructions for authors on how to make a submission to *In die Skriflig*/*In Luce Verbi*. For details of how to prepare and submit a revised manuscript via the online manuscript submission system, please see the [instructions for resubmission](#) (after formal peer review).

Please select the applicable link below:

- [+ Start the submission process](#)
- [Submit original work to *In die Skriflig*/*In Luce Verbi*](#)
- [Cover page](#)
- [Formatting requirements](#)
- [Publication ethics](#)
- [Plagiarism](#)
- [Instructions on how the submission process work](#)

[Submit original work to *In die Skriflig*/*In Luce Verbi*](#) ↑

We ask our authors to ensure that they submit original work that:

- have been honestly carried out according to rigorous scientific standards that has not been obtained fraudulently or dishonestly, or fabricated or falsified
- present an accurate account of the research performed and the results obtained and offer an objective discussion of the significance thereof
- present sufficient detail and reference to public sources of information in order to permit peers to repeat the work if needed
- report data accurately and never 'fudged', with any problematic data also treated accordingly
- cite all relevant references; it is the duty of the author to check the references that are cited very carefully to ensure that the details are accurate and in the correct format
- declare any (potential) conflicts of interest
- do not claim originality if others have already reported similar work in part or as a whole
- give credit to the work and findings of others that have led to your findings or influenced them in some way
- identify any hazards inherent in conducting the research
- do not contain plagiarised material or anything that is libellous, defamatory, indecent, obscene or otherwise unlawful and that the work does not infringe on the rights of others
- provide all the statements required by the journal in order to prove that the experimental protocols were approved appropriately and that they meet all the guidelines of the agency involved, including obtaining informed consent where required if investigations have involved animals or human subjects
- contain explicit permission of the individuals from whom information was privately obtained and that they have accompanying appropriate letters confirming permission to include this information, as may be acquired by journals
- avoid fragmenting research to maximise the number of articles submitted, also known as 'salami publishing'

- have not been submitted to multiple journals or other publication media.

Although an experimental or theoretical study may sometimes justify criticism of the work of another scientist, in no circumstances is personal criticism appropriate. Do not present work, or use language, in a way that detracts from the work or ideas of others.

Cover page: The format of the compulsory cover letter forms part of your submission and is located on the first page of your manuscript and should always be presented in English. You should provide all of the following elements:

- **Article title:** Provide a short title of 50 characters or less.
- **Significance of work:** Briefly state the significance of the book being reported on.
- **Full author details:** Title(s), Full name(s), Position(s), Affiliation(s) and contact details (postal address, email, telephone and cellphone number) of each author.
- **Corresponding author:** Identify to whom all correspondence should be addressed to.
- **Authors' contributions:** Briefly summarise the nature of the contribution made by each of the authors listed.
- **Summary:** Lastly, a list containing the number of words, pages, tables, figures and/or other supplementary material should accompany the submission.

Formatting requirements: Please use British English, that is, according to the Oxford English Dictionary. Avoid Americanisms (e.g. use 's' and not 'z'). Consult the Oxford English Dictionary when in doubt and remember to set your version of Microsoft Word to UK English.

- **Language:** Manuscripts must be written in British English, Afrikaans and Dutch.
- **Line numbers:** Insert continuous line numbers.
- **Font:**
 - **Font type:** Palatino
 - **Symbols font type:** Times New Roman
 - **General font size:** 12pt
- **Line spacing:** 1.5
- **Headings:** Ensure that formatting for headings is consistent in the manuscript.
 - First headings: normal case, bold and 14pt
 - Second headings: normal case, underlined and 14pt
 - Third headings: normal case, bold and 12pt
 - Fourth headings: normal case, bold, running-in text and separated by a colon.

Our publication system supports a limited range of formats for text and graphics. Text files can be submitted in the following formats only:

- Microsoft Word (.doc): We cannot accept Word 2007 DOCX files. If you have created your manuscript using Word 2007, you must save the document as a Word 2003 file before submission.
- Rich Text Format (RTF) documents uploaded during Step 2 of the submission process. Users of other word processing packages should save or convert their files to RTF before uploading. Many free tools are available that will make this process easier.



For full details on how to ensure your manuscript adheres to the house style, [click here](#).

Publication ethics ↑

AOSIS endorses and applies the standards of the [Committee on Publication Ethics \(COPE\)](#), which promotes integrity in peer-reviewed research publications.

Experimental research on animals and/or humans must follow internationally recognised guidelines. A statement to this effect must appear in the Ethical Considerations section of the

manuscript, including the name of the body that gave approval, with a reference number where appropriate. Informed consent must also be documented. Manuscripts will be rejected if the editorial office considers that the research has not been carried out within an ethical framework (e.g. if the severity of the experimental procedure is not justified by the value of the knowledge gained.)

The author should aim to post answers to the following questions:

- What risks to the subject are entailed in involvement in the research? Are there any potential physical, psychological or disclosure dangers that can be anticipated? What is the possible benefit or harm to the subject or society as a result of their participation or from the project as a whole? What procedures have been established for the care and protection of subjects (e.g. insurance, medical cover) and the control of any information gained from them or about them?
- Was there any sense in subjects being 'obliged' to participate – as in the case of students, prisoners, learners or patients – or were volunteers being recruited? If participation was compulsory, the potential consequences of non-compliance must be indicated to subjects; if voluntary, entitlement to withdraw consent must be indicated as well as when that entitlement lapses.
- Authors must include how informed consent was handled in the study and include, in detail, the way in which data protection was handled.

Plagiarism: It should be noted that salami publishing and parallel publishing detract from the innovative nature of research findings. The journal publisher, AOSIS, is a member of the [CrossCheck](#) plagiarism detection initiative. All works are submitted to CrossCheck and is available to the editors of the journal to detect instances of overlapping and similar text. In the event of high percentage overlap, the COPE guidelines will apply ([learn more](#)).

Instructions on how the submission process work [↑](#)

The authors of an article need to decide who the corresponding author will be that will take responsibility during the submission, peer review and editing processes. By submitting an article for publication you confirm that you are the corresponding/submitting author and that AOSIS will be communicating with you about the article.

Firstly, register or ensure you have an author account with *In die Skriflig/In Luce Verbi*. Secondly, ensure your contact details are updated in your profile.

After you have logged in and clicked on **Author**, click on the link start a new submission to go to Step 1 of the five-step submission process (scroll down and click on the **Next** button on each screen to save your work and advance to the next screen):

- Select the journal section and complete the submission checklist.
- **Upload submission file.** Click on the **Browse** button and locate the file on your computer. When you have selected the file you wish to upload, click the **Upload** button. Review your submission (in a Word .doc) before sending it to the editors and ensure you have included your manuscript cover page.
- Complete the manuscript metadata, author(s) details, manuscript title, manuscript abstract and keywords.
- **Upload either a separate cover page or other multiple supplementaryfile(s), such as large tables and photographs:**
 - Click on the **Browse** button and locate the file on your computer.
 - Select the designation of your supplementary files (.eps, .xls).
 - When you have selected the file you wish to upload, click the **Upload** button. Note: *You have a limit of 15MB for a single file you upload.*
 - Repeat the process until all supplementary files have been uploaded. Note: *You can only upload 1 supplementary file at a time.*
- Review your submission online in Step 5.

- Click the **Finish Submit** button when you would like to complete the manuscript submission to the journal.

Support videos:

- Click here to [view a video](#) on how to submit a paper online.
- Click here to [view a video](#) on how to copyedit and proofread your article.

The submission process can be interrupted at any time; when you return to the site you can continue from where you left off. After completing the manuscript submission, you will receive a submission confirmation via email. You can also log into *In die Skriflig/In Luce Verbi* at any time to check the status of your manuscript.

Publisher House Style for authors

Please select the applicable link below:

- [Language usage](#)
- [Tables, figures and photographs](#)
- [Guidelines for Math](#)
- [Unicode fonts](#)

Fonts: Please use standard (Unicode) fonts such as Palatino, Times New Roman, Helvetica and Symbol. Fonts that have not been embedded will usually be replaced by Courier, resulting in character loss or realignment.

Creatives: Please supply images as the size intended for final publication. Resizing of images is time consuming and can result in loss of quality.

[Language usage](#) ↑

General elements

- **Quotations:** Use single quotation marks for quotations. For quotations within quotations, use double quotation marks. Quotations of more than 30 words are to be indented. Do not use quotation marks for indented quotations unless it is direct speech (e.g. interviewee responses).
- **En dashes and hyphens:** Use an en dash (i.e. extended hyphen that can be found in the Insert box under Symbols in Microsoft Word) in ranges of numbers and dates. Use hyphens only for words that are hyphenated.
- **Dates:** Format dates as '02 October 2006', except at the beginning of sentences where numerals and dates should either be spelt out or the sentence should be rearranged.
- **Percentage:** The per cent symbol (%) is used in conjunction with all numbers (e.g. 12%). Numbers that have been written out will appear with 'per cent' (e.g. five per cent). 'Percentage' is used in a general sense.
- **Numbers:** Numbers from one to nine must be written out. Numbers from 10 onwards, must be used as numerals, except at the beginning of a sentence.
- **Spacing and punctuation:** There should be one space (and not two) between sentences; one space before unit terms (e.g. 5 kg, 5 cm, 5 mmol, 5 days, 5 °C, etc.), but no space before the percentage symbol (%). Thousands and millions are marked with a space and *not* a comma (e.g. 1000, 1 000 000). Ranges are expressed with an extended hyphen (i.e. en dash), not with a short hyphen (e.g. 1990–2000).
- **Units:** The use of units should conform to the SI convention and be abbreviated accordingly. Metric units and their international symbols are used throughout, as in the decimal point (not the decimal comma), and the 24-hour clock.

- **Foreign language:** Foreign language words should be italicised, unless these words are part of normal usage. Consult the Oxford English Dictionary if in doubt.
- **Acronyms:** If a phrase with an established acronym or abbreviation is used and appears more than five times in your article, please include the acronym or abbreviation in brackets after first mention of the phrase, and then use the acronym or abbreviation only. Please note that you should not define acronyms or abbreviations in any of your headings. If either has been used in your abstract, you need to define them again on their first usage in the main text.

Sensitive and political terms

- **Race and ethnicity:** Try to avoid terms such as 'Blacks' and 'Whites' (please note the use of uppercase letters); use instead 'Black *people*', 'White *people*', etc. 'Caucasian', 'Mongoloid', 'Negroid', etc. are generally to be avoided except in human population studies. 'Mixed race' is preferable to 'half-caste' or 'Coloured'.
- **Disabilities:** Avoid using 'the disabled', 'the handicapped', and instead use 'people with disabilities' not 'the disabled' or 'people with learning difficulties', not 'mentally handicapped'.
- **Disease**
 - Avoid health-determined categorisation.
 - Use 'people with diabetes'; not 'diabetics'.
 - Use 'people with cancer'; not 'cancer sufferers'.
 - Use 'sexually transmitted infection (STI)' and not 'sexually transmitted disease (STD)'.
 - Avoid phrasing that dehumanises a patient. Many authors use case (instance of a disease) when they mean patient (i.e. the person or individual who is ill with the (disease)).
- **AIDS**
 - Ensure that 'AIDS' is used for the disease and 'HIV' for the virus, e.g. do not use 'AIDS carrier', 'AIDS positive', 'AIDS virus' or 'catching AIDS or HIV/AIDS' (avoid using the solidus here).
 - 'AIDS sufferer/victim' is inappropriate; use 'people with AIDS'.
 - Refer to 'people who practise high-risk activities' and not '*high-risk groups*'.
 - The expression 'full-blown AIDS' is unnecessary if the correct distinction has been made between HIV and AIDS.
- **Male versus Female**
 - 'Male' and 'female' are *adjectives*, so be careful to use them as such (i.e. a *male* patient and a *female* frog, but a 35-year-old *man*, a French *woman* and a group of 25 *men* and 35 *women*).
- **Sexuality:** Avoid the terms '*homosexual activities*' (if achievable within the manuscript's context, specify which activity is being referred to, especially when dealing with medical research.) Avoid using '*homosexuals*' (specify homosexual men or homosexual women).
- **Gender:** Use gender neutral nouns. Avoid the use of 'man' if not specifically referring to men; for example:
 - for 'man' use 'humans'
 - for 'man-kind' use 'the human race'
 - for 'man-power' use 'workforce'
 - for 'man-made fibre' use 'synthetic fibre'
- **'He/she', 'him/her' and 'his/hers':** For 'he/she', 'him/her' and 'his/hers' rather use 'he or she', 'her or him', 'his or hers' (without a solidus) or change to plural 'they'. Use inclusive pronouns: use 'he or she', or rephrase the sentence (rephrasing to the plural form often works):

✗ ... *Any observer* of changes in publishing technology will perceive that *he* has need of...

✓ ... **Observers** of... will perceive that *they* have...

Beware of referring to people with stereotypical pronouns (e.g. 'the doctor treated *his* patient'; 'the secretary tidied *her* desk').

- **Geography**

- The terms *Third World*, *poor countries* and *underdeveloped countries* should be avoided.
- *Developing* or *non-developed country/society* is better, but it is best to specify countries or regions instead.
- *Western society* and *Western World* should only be used in relation to geography; otherwise, use *developed world/society* or, even better, specify the countries themselves or the region.

Tables, figures and photographs ↑

In Step 4 of the online submission process, upload all tables, figures, images, and supplementary files. Tables should be saved and uploaded as separate Excel (.xls) files with no more than 10 figures and tables in total per article. Ensure that all personal identifying information is removed from the supplementary files as indicated in the provided instructions. All captions should be provided together on a separate page. Tables and figures should use numerical numbers.

- **Organise your visual presentation:** Once you have read through the analyses and decided how best to present each table or figure, think about how you will arrange them within the article. The analyses should tell a story that leads the reader through the steps needed to logically answer the question(s) that you as author are posing in the Introduction. The order in which you present the results can be as important in convincing the readers as what you actually are saying in the text.
- **How to refer to tables and figures in the text:** Every figure and table included in the paper *must* be referred to in the body of the text. Use sentences that draw the reader's attention to the relationship or trend you wish to highlight, referring to the appropriate figure or table only in parenthesis e.g.:
 - Germination rates were significantly higher after 24 h in running water than in controls (Figure 4).
 - DNA sequence homologies for the purple gene from the four congeners (Table 1) show high similarity, differing by at most 4 base pairs. (Avoid sentences that give no information other than directing the reader to the figure or table, e.g. Table 1 shows the summary results for male and female heights at Bates College.)
- **Abbreviation of the word 'Figure':** When referring to a figure in the text, the word 'figure' is never abbreviated as 'Fig.'; the same rule applies to the usage of 'table'. Both words are spelled out completely in descriptive legends.
- **How to number tables and figures:** Figures and tables are numbered independently, in the sequence in which you refer to them in the text, starting with Figure 1 and Table 1. If, in revision, you change the presentation sequence of the figures and tables, you must renumber them to reflect the new sequence.
- **The acid test for tables and figures:** Any table or figure you present must be clear, well-labelled, and described by its legend to be understood by your intended audience without reading the results section. That is, it must be able to stand alone and be interpretable. Overly complicated figures or tables may be difficult to understand in or out of context, so strive for simplicity whenever possible.
- **Descriptive legends or captions:** To pass the acid test above, a clear and complete legend (sometimes called a caption) is essential. Like the title of the article itself, each legend should convey as much information as possible about what the table or figure intends to tell the reader:
 - the results that are being shown in the graph(s), including the summary statistics plotted
 - the organism studied in the experiment (if applicable)
 - a context for the results: the treatment applied or the relationship displayed, etc.
 - location (*only* if a field experiment)
 - specific explanatory information needed to interpret the results shown (in tables, this is frequently done as footnotes)
 - culture parameters or conditions if applicable (temperature, media, etc.)
 - sample sizes and statistical test summaries, as they apply

Do not simply restate the axis labels with a 'versus' written in between.

Example: Figure 1: Height frequency (%) of White Pines (*Pinus strobus*) in the Thorncrag Bird Sanctuary, Lewiston, Maine, before and after the Ice Storm of 1998. Before, $n = 137$, after, $n = 133$. Four trees fell during the storm and were excluded from the post-storm survey.

TABLE 4: Leaf dry weights of three pea varieties grown at different temperatures.

Variety	Temperature (°C)		Days after sowing		
	Mean	HE	40	55	70
EC-12876	18	35	0.40 ^a	3.88 ^a	0.17*
P-116	22	38	0.52	0.43 ^b	1.20
T-163	25	38	1.35**	5.36 ^b	4.20

Source: Environmental Association Report 2009
 HE, heat event (introduced at weekly intervals).
 Values are given as means ($n = 30$).
^a, Each group consisted of three separate plots.
^b, Pest infection prevented data collection.
 *, $p < 0.05$; **, $p < 0.01$

Note: Questions frequently arise about how much methodology to include in the legend, and how much results reporting should be done. For laboratory reports, specific results should be reported in the results text with a reference to the applicable table or figure. Other than culture conditions, methods are similarly confined to the Methods section.

Footnotes to tables, figures and photographs

Do not introduce footnotes in the body of the article. Footnotes should be used as follows:

- Copyright and permissions to reproduce should be clearly stated.
- Notes about the table as a whole can be left unlinked (i.e. no linking letters or numbers or symbols) or linked to, for example, a relevant column heading.
- Notes about specific parts of the table should be linked using superscript lower case letters (preferred), superscript numbers or symbols.
- If lower case letters are used, it could be confused with the table data; use symbols or numbers instead.
- Do not make use of superscript numbers in parentheses (brackets).
- If an abbreviation is mentioned for the first time in a table (e.g. 'CE' in Table 1), it must be defined in a footnote to that table, (e.g. HE, Heat event (introduced at weekly intervals)).
- Asterisk footnotes are reserved for probability values in tables and usually signify the following values: *, $p \leq 0.05$; **, $p \leq 0.01$; ***, $p \leq 0.001$. The asterisk is often used in mathematics and should therefore be avoided as a footnote symbol.
- Footnote links should be placed after punctuation. The preferred order of footnote symbols in tables (which should be superscripted) is †, ‡, §, ¶ (these are doubled if more footnotes are needed, e.g. ††).
- When superscript numbers or letters are used in text, beware of potential confusion with other superscripts (e.g. 2 for 'squared').
- Footnotes should be in the following order:
 - source notes
 - other general notes
 - notes on specific parts of the table (following the order in the table itself)
 - notes on level of probability

Guidance on submitting creatives electronically

Supply your manuscript creatives in one of the following three preferred formats:

- **TIFF:** This is an image made up of pixels and is the most universal and most widely supported format across Windows and Mac platforms. Most graphics packages can save a file as a TIFF. The higher the resolution (i.e. the number of pixels) the sharper the final image.
 - Colour or greyscale photographic images: 300dpi
 - Line art or combination images: 600/900dpi

- We would recommend using this format for photographic images.
- **EPS:** An EPS is essentially an envelope for holding text and images. Line art can be produced as an EPS (in Illustrator, for example). There are virtually no limits to scaling line art saved as an EPS. It can also contain TIFF images. However, please ensure that all fonts are embedded (that is, saved as outlines) and that line weights are not defined as hairline.
- **PDF:** This format is, again, like an EPS in that it is an envelope for holding different kinds of images and line art. Great care should be taken to ensure that fonts are embedded and that original images are at the correct size and resolution before being saved as a PDF. It is possible to save or export as TIFF or EPS from most graphics applications, just as it is possible to save direct to a PDF from most graphics packages by using a postscript printer driver. PDF creation packages (e.g. Acrobat Distiller) are also now widely available.

Other file formats

- **JPEG:** A JPEG compressed TIFF is acceptable as long as the degree of compression is moderate. It is better to use a JPEG for online images as a good quality image is achievable even with a high degree of compression.
- **GIF:** A format suitable for images that contain few colours. Again, this should only be used for images intended for the web.
- We cannot guarantee the quality of images supplied in other formats.

Colour:

- *Greyscale, CMYK, RGB.*
- **Greyscale** art should be saved in greyscale mode.
- **CyanMagentaYellowBlack** are the base colours used during the printing process.
- Any colour that is to appear in print must be in CMYK mode.
- **RedGreenBlue** are the colours used by monitors and default scanner settings. Any colour that is to appear online must be in RGB mode.

Guidelines for Math [↑](#)

- Set display equations in MathType. Each display equation should be in its own MathType object. Each MathType object should contain the entire equation, including final punctuation. The equation number should be set as Microsoft Word regular text, outside the MathType object, separated by either a tab or a space.
- Set in-text (inline) math in Microsoft Word regular text. Exception: If in-text (inline) math has elements that should be stacked or have rules, circumflexes, arrows, or other accents spanning over more than one character, set in MathType as 'Inline Equation.'
- If any characters cannot be found in Word's Symbol palette ('(normal text)', 'Times New Roman,' or 'Symbol'), please set in MathType.
- No display equations are allowed in figure captions, table titles, or table footnotes. If a display equation occurs in a text footnote, it is best to recast it as inline math. There are a few journals with lengthy footnotes with style exceptions to this rule.
- No numbered equations are allowed in table footnotes.
- Display and/or numbered equations ARE allowed in table body, but must be 'inline' when converted to MathML equations.

Source: <http://www.indieskriflig.org.za/index.php/skriflig/pages/view/newsubmission#2>

Date of access: 28 September 2016