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Science, Faith, and the Scholar's Use of the Scriptures

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What is Science?

"Science," a word derived from the Latin verb *scire* (to know), may be defined as man's conscious and systematic attempt to know reality. Scientific work requires meticulous observation as well as discerning classification, organization, and interpretation of information. More specifically, a Christian understanding of science involves the following considerations.

(1) All men, by virtue of their being made in God's image and as a consequence of having received the cultural mandate, are both qualified and obligated to be scientists, at least in a certain sense, for all men ought to be actively reflecting upon reality. Science is not reserved for the highly trained elite who have access to advanced instrumentation and are skilled in the mathematical manipulation of data. Of course, there is a place for the expert who devotes his entire career to scientific work in a narrow field of specialization. But the term "science" should not be limited to this kind of highly technical specialization.

(2) All scientific knowledge is the result of human activity and is not identical with reality itself. Nevertheless, the specific goal of man's scientific quest is to develop a body of knowledge that accurately reflects the true character of reality.

(3) The boundaries which separate various scientific disciplines do not suggest fragmentation in the cosmos, but rather are humanly formulated divisions of labor which facilitate man's implementation of the scientific task. However, delimitation of scientific disciplines is not an arbitrary matter, for discipline boundaries ought to reflect accurately the variety and differentiation inherent in the creation itself. For example, when biologists distinguish between the study of plants (botany) and the study of animals (zoology), they recognize a genuine differentiation in the creation. On the other hand, when behaviorists define psychology as the science of human and animal behavior, they tend to
obscure the significant differences between man and animals.

A study of the history of science reveals that some sciences have a long history, whereas others are of recent origin. It is possible that through further insight, study, and knowledge, a discipline may diverge into two, that two may merge into one, or that the relationships between disciplines may be subject to rearrangement. Perhaps some entirely new disciplines will come to the attention of man.

Because of these possible changes in the recognition and arrangement of scientific disciplines, we must recognize that the task of drawing exact boundary lines between disciplines is a tentative matter and subject to disagreement.

(4) Scientific knowledge is inseparably bound up with the underlying religious presuppositions of the scientist. These religious presuppositions are basically of two kinds: those which stem from a regenerate heart and those which stem from an unregenerate heart.

We are concerned here primarily with the regenerate man, living out of a regenerate heart. One result of the Holy Spirit's regenerating work in the heart is that the regenerate man has a renewed capacity truly to know God, himself, and the creation. This does not mean that the regenerate man will automatically approach science with correct presuppositions, for it is impossible for him to escape completely the influence of sin, both within his own nature and also in the thought systems of his culture.

It is only through the constant reformulation and reformation of his thinking, in the light of the Scriptures, that the regenerate man comes more and more to hold beliefs which are a consistent expression of his basic heart commitment to Jesus Christ. And thus the regenerate scientist, living out of a regenerate heart and directed by Biblically grounded presuppositions, is more adequately qualified to carry out his scientific task and to reflect more truthfully in his scientific knowledge that part of reality which is his concern.

(5) Science should be a communal activity. No one person can hope to approach contemporary science and master physics one year, chemistry the next, then biology, psychology, sociology, etc. The successful implementation of the scientific task requires a division of labor within a community of persons who are united in their commitment to truly Biblical religious presuppositions and in a Christian understanding of the goals of science.

(6) Science is a controversial activity. Differences in scientific conclusions are due to a variety of reasons, including the facts that: (a) scientific thought is affected by man's sin and finitude and also biased by antithetical religious presuppositions; (b) even basically true scientific knowledge is constantly in a process of development and reformulation; and (c) the variety and multiformity which characterizes the entire cosmos allow for a plurality of complementary insights, even among scientists concerned with one aspect of reality.

(7) The purpose of science is to enable man to attain a deeper understanding of the true meaning of reality (including himself). This deeper understanding of reality ought to enable man to fulfill his task as God's servant-king more effectively and should also lead him to a richer relationship to the Christ, in Whom the entire cosmos is centered.

The Role of Faith in Science

The word faith is used in two different ways in Scripture and in our Reformed confessional standards. Often the Scriptures and our confessional documents speak of "the faith" or "the Christian faith." As used in this way, the term faith refers to the body of truth revealed by God in the Scriptures and believed by the true Church of Jesus Christ. Here the term faith is used in a relatively narrower sense. But the term faith is also used in a broader sense to refer to the heart commitment which binds the true believer to Christ and to the Christian living which stems from that believing heart. It is this broader meaning that Paul has in mind in Romans 14:23 when he says that "whatever is not from faith is sin." Likewise, it is this broader view of faith that is described in Articles XXII-XXIV of the Belgic Confession.
Yet, the unregenerate man, directed by a false faith in himself, is so insensitive to the truth that surrounds him that he inevitably distorts whatever he attempts to understand. Thinking himself to be wise, he becomes a fool.

Recognition of the noetic (intellect-influencing) effects of sin is one of the cornerstones of Calvinism. For it is only when we recognize the thinking of the unregenerate man as the "shapeless ruin" that Calvin held it to be, that we can appreciate the sovereign grace of God that works to enlighten the heart and enables man to comprehend the truth. This enlightening, which includes a redirecting of man's thinking, takes place as the Holy Spirit produces faith in the human heart. Thus, a true Christian faith is a necessary prerequisite to a proper scientific understanding of reality.

Just as the unregenerate scientist's faith affects all his life, so the Christian's faith ought to influence all his life, including his scientific work. Walking by a Biblical faith, he ought to begin his scientific work with a unique set of presuppositions. For by faith he ought to recognize that the universe was created by the Word of God. By faith he ought to confess that the earth is the Lord's and that all things cohere in Christ. And by faith he ought to recognize his own creatureliness and his obligation to bring all of his thinking activity into captivity to the obedience of Christ. Such faith presuppositions will affect the Christian scientist's observation and interpretation of the creation, as well as his analysis, interpretation, and evaluation of the writings of men on various aspects of that creation. Although the effects of sin are never wholly removed from the mind of the Christian in this life, nevertheless as the Holy Spirit begins to take away the blindness from his eyes, the Christian scientist will become more and more aware of the fulness of God's

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Some type of religious faith invariably underlies the work of all scientists, theologian and non-theologian, Christian and non-Christian. For, every scientist performs his scientific work as the expression of some kind of religious heart commitment. A man's scientific work is either the expression of his submission to Christ or else it is the expression of his idolatrous attempt to make himself the Lord of his own life.

The non-Christian's idolatrous faith in himself is not only the underlying motive with which he performs his scientific work, but his false faith also has a direct influence in his science, affecting both his observation and his interpretation of the creation. For as the non-Christian attempts to carry out his scientific work, he is handicapped by dulled senses and by a blind and reprobate mind. To be sure, the revelation communicated by God through created things is abundantly clear.
revelation in creation. And as the same Spirit begins to impress the truths of Scripture upon his mind, his interpretation of the cosmos will be increasingly faithful to the true order of things.

The Use of Scripture in the Non-Theological Sciences

The primary concern of the non-theological sciences is to comprehend God's created world. Nevertheless, this task ought not to be divorced from the study of Scripture. There are several major considerations that account for the significance of Scripture in the non-theological sciences.

(1) Scripture is necessary to reconcile the scientist to God, and thereby to enable him to see creation properly. As a scientist examines the universe, he is not dealing with impersonal stimuli, but, rather, he is dealing with the handiwork of God—handiwork which clearly reveals God's wisdom, power, and goodness. And since man by nature loves darkness rather than light, he cannot bear to face the revelation of God conveyed to him by the cosmos. Consequently, the natural man's knowledge is characterized by a denial and distortion of the true character of the cosmos.

The primary requirement for a successful implementation of the scientific task is that the individuals engaged in the scientific task be reconciled to God through Christ. And in order that this salvation may be experienced, a scientist must read, hear, and believe the Scripture, so that he, by the Holy Spirit's work, may come to know and obey Jesus Christ. Once that initial relationship to Christ has begun, a Christian scientist must make constant use of the Scripture in order to grow in his knowledge and his obedience to Christ. This maturation ought to encompass all of the Christian scientist's life, including his scientific work. For as the Christian scientist experiences Spirit-directed growth in sanctification, it should affect (a) the motives with which he does his scientific work, (b) the character and direction of his work, and, also, (c) his ability to comprehend the fullness of meaning that God has placed upon creation.

This kind of growth takes place only as the Christian experiences a day-by-day enlightening by the written Word of God.

(2) Scripture is necessary to expose false non-Christian presuppositions and to instruct man in a true world-life view. Two examples may be used to clarify this point. First, the non-Christian natural scientist often holds to either a mechanistic model of natural law or else resorts to a relativistic, chance-oriented view of reality. But in Scripture we learn that the universe is upheld by the Word of God and that the physical phenomena follow a consistent pattern because God rules His creation in an orderly way. Therefore, the Christian scientist ought to reject a mechanistic or a chance-oriented view of reality and recognize that the consistency and orderliness which he observes in events is a result of the regularity with which God governs His creation.

A second example may be taken from the field of psychology. Non-Christian psychologists typically see man as an evolved animal, whose highest purpose in life is to satisfy his needs in the struggle for survival. But Scripture clearly reveals that man was created by God directly from dust, and given the unique purpose of glorifying God by reigning as a vassal king over the earth. These two contradictory sets of anthropological presuppositions result in very different sciences of psychology.

The fact that a scientist is dependent upon Scriptural revelation for the development of a true presuppositional foundation in science does not imply that the unregenerate scientist who ignores Scripture will be completely blind and unfruitful in his scientific work. On the contrary, the unregenerate scientist may be able to acquire many partial truths and valuable insights into the character of the creation. But, if a man is to understand the results of scientific research in a proper framework and see how everything is interrelated, he must be guided by Scripture. For it is only in Scripture that we learn that the universe was created by the Triune God: Father, Son, and Holy Spirit, and that this same Triune God now upholds His creation by the Word of His power. Likewise, it is only in Scripture that we learn that God has appointed the resur-
rected Christ to reign as King over the earth, \(^{21}\) that the entire universe holds together in Him, \(^{22}\) and that all events are moving toward a historical climax of judgment and restoration to be ushered in by Christ's return. \(^{23}\)

The answers to the deepest questions of life—those questions that ask about the ultimate causes and purposes of life—can be found only as the Holy Spirit opens up the Scriptures to man.

(3) Scripture is the definitive authority on whatever it speaks, also when it speaks on a matter pertinent to a particular science. Scripture is normative not only when it speaks on presuppositional questions basic to scientific thought, such as the question of origins, on the issue of determinism, causality, and law, but Scriptures is also normative whenever it speaks on an issue overlapping the subject matter of specific sciences.

For example, in Daniel 5 it is stated that Belshazzar was king just before Babylon was captured by Darius the Mede. But in the early part of this century, some historians argued that the book of Daniel had to be in error. There was no scientific evidence to suggest that there had ever been a king named Belshazzar, but there was considerable evidence indicating that Nabonidus was king over the Babylonian empire just prior to its fall. However, this conflict was resolved when archeological research discovered that Belshazzar was the son of Nabonidus. It further became evident that Belshazzar was indeed king in Babylon, but that Babylon was part of a larger empire over which Nabonidus was king.

To give a second example: for the past fifty years, many psychologists have argued that the punishment of children has no beneficial effect upon socialization. This position has been supported by a weighty amount of research indicating that the immediate consequence of punishment on a child is increased aggression, resentment, and greater anti-social inclinations. Such findings seem to be in direct contradiction to the many Scriptural admonitions promising that the rod of reproof gives wisdom. \(^{24}\)

Recent studies of child rearing practices have shown, however, that earlier research tended to deal with homes where discipline was administered inconsistently and unfairly and also that the previous studies did not attend to the long-range effects of punishment, but considered only immediate consequences. Developmental psychologists have currently amassed a considerable amount of evidence indicating that punishment, if administered fairly and consistently and complemented by a balance of parental praise and acceptance, has a beneficial effect on the child. Although the immediate effects of such discipline often tend to provoke aggression, long-range studies find that punishment is significantly correlated with increased socialization.

Both these examples deal with conflicts between the findings of science and the teaching of Scripture that have been resolved as a result of additional scientific research. But what of the many conflicts that have not been so resolved? For example, Genesis 5:27 states that Methuselah was 782 years old when he became the father of Lamech. Such a statement seems to be a ludicrous violation of our scientific knowledge of life-span and age of reproduction both today and in history. Nevertheless, whenever it speaks, Scripture speaks authoritatively, and the Christian scientist is under obligation to accept any statements of Scripture that bear directly or indirectly on his field of investigation.

But the fact that the Bible may speak on issues related to science does not imply that
there is no need for scientific research on these issues. Take, for example, the matter of parental punishment of children. The Bible is clear in its teaching that parents ought to make regular use of "the rod" in discipline. Furthermore, Scripture is clear in maintaining that this discipline ought to be carried out in fatherly love and not done in such a way as to provoke the child to anger. But exactly what patterns of parental punishment do tend to provoke aggressive responses in children? And, specifically, what must a parent do in order to conduct discipline in a way that is most advantageous for the child? These questions are not answered for us in the Bible with the kind of detailed explicitness that we might desire. Such questions must be answered from psychological research that is based upon the general Scriptural norms relevant to the issue. One purpose for which the Christian does scientific research is to complement his Scriptural perspective of life with the kind of concrete details that can be obtained only through scientific observation.

Of course, most of the highly detailed, abstract, and technical questions raised by the non-theological sciences are not answered directly in Scripture. The Bible is not a textbook of biology, psychology, etc. The non-theological sciences are required to focus their attention upon the study of the creation in order to find answers to the issues with which they are concerned. But we should not forget that the results of the observation of creation undertaken in the non-theological sciences cannot have full meaning for the scientist until those findings are related to the broader presuppositions of a Scripturally-based world-view.

1. See Acts 6:7; 14:22; Galatians 1:23; 1 Timothy 4:1; Titus 1:13. Cf. also Heidelberg Catechism, Questions 20-23, which deal with "the articles of our catholic and undoubted Christian faith."

2. See II Corinthians 5:7; Galatians 2:20; 3:11; Hebrews 11 (entire chapter). Cf. also Heidelberg Catechism, Question 20, which speaks of faith as that which ingrafts us into Christ.


5. Calvin's statement on this point is forceful: "Bright, however, as is the manifestation which God gives both of himself, and his immortal kingdom in the mirror of his works, so great is our stupidity, so dull are we in regard to these bright manifestations, that we derive no benefit from them." Institutes I, V, II.

6. Romans 1:22.

7. Institutes, II, II, 12. This stress upon Calvin's doctrine of the noetic effects of sin ought to be qualified by two considerations. First of all, Calvin held that human thinking is seriously impaired, but not totally destroyed or rendered useless because of sin. Fallen man may recognize and comprehend fragments of truth as well as have partial insights into the true character of the cosmos. These insights can be of value to the Christian.

Secondly, Calvin did not mean to imply that man's intellect is equally distorted by sin regardless of the nature of the subject matter it attempts to comprehend. Calvin held that it is necessary to distinguish between the functioning of the mind with respect to "inferior objects," i.e., those things confined to the boundaries of this life, and the functioning of the mind with respect to "superior objects," i.e., the knowledge of God, the method of true righteousness, and the mysteries of the heavenly Kingdom. Man's intellect is much more seriously impaired when it attempts to comprehend superior things than in its functioning with respect to inferior things. (Institutes, II, II, 13). Consequently, it is to be expected that the unregenerate man's thinking will be less distorted in the non-theological sciences than it will be in theology. But it cannot be forgotten that human thinking is perverted by the influence of sin even as man seeks to develop the sciences of mathematics, history, linguistics, physics, chemistry, biology, psychology, and sociology, as well as in the composition, interpretation, and evaluation of the verbal and non-verbal arts.


11. II Corinthians 10:5.

Perhaps this point seems to deny the sufficiency of Scripture. But there is no intention of denying here that the Bible is the all-sufficient rule of faith and life. We need nothing other than the Bible to find salvation in Christ and to learn God's will for our life. But one should not attempt to apply the doctrine of the sufficiency of Scripture to scientific knowledge, for the Bible is decidedly not sufficient as a source of scientific data. If the Christian scientist is to develop a complete science he is required to incorporate into his Biblical perspective of life the kind of detailed information that can be obtained only through scientific research.

15. Jeremiah 31:35; 36; Matthew 5:45.
17. Genesis 1:26, 27.
19. Genesis 1:1, 2; Psalm 104:30; John 1:3.
20. Hebrews 1:2, 3.

Reading, Literature, and Concern for Values

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Introduction

The art of teaching today is complex. Therefore, certain psychological and pedagogical principles must be carefully considered. There is concern not only for communication and for the cognitive process, but also for emotional climate, for social climate, for play and games, for aesthetics, and for strategies. Teaching involves working with all aspects of the whole human being—for example, the physical, the psychological, the ethical, and the spiritual dimensions. Involved in the art of teaching should be an awareness on the part of the teacher of his role in aiding the student on the road to Christian adulthood.

The thrust of this presentation is to bring to the attention of the reader the importance of the teaching of reading today, with special emphasis on how what is read relates to the development of values.