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Science, Subjectivity And Scripture

(Is Biblical Interpretation "Scientific"?)

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Science and logic are quite naturally matters of keen interest to evangelical scholarship, even more so than usual in a day when hermeneutics looms large in theological discussion. A commonplace verdict on Biblical interpretation, along with a popular imaginative portrait of science, occasion this paper. It surveys aspects of contemporary epistemology with which we should be familiar and issues which are systematically basic to the philosophy of science and logic. The aim is that we might stand on a more reliable footing in speaking for and about our theological method and rationality as believers in the Lord of truth.

Scripture: Enigma Or Putty?

As an approach to the epistemological issues to which we are driven by hermeneutics today, we can consider a commonly voiced objection against Biblical interpretation. In their day the Reformers stood firmly against the demand for a priestly intervention between the Bible and a general readership, maintaining the prerogative and effectiveness of private interpretation. Scriptural perspicuity meant that its literature was not so technical or peculiar that some kind of "expert" was required to mediate its message to common men - whether that mediator was an expert in the opinions of the Roman magisterium, allegorical fancies, historical subtleties, existential insight, demythologization, or what have you. The Reformers were convinced that freeing the Bible from authoritative interveners need not spell the end to finding any distance, specifiable, definite message in the Scripture, for it was God Himself who communicated His own special word therein without obscuring His intent. Biblical clarity, then, stood for a *double* guarantee: it was neither so *complex* as to be an esoteric enigma, nor so *formless* as to be putty molded to any preconceived notion. The splintering of the Protestant church into so many individual factions subsequent to that time, the multiplication of novel viewpoints without end, and the apparent irresolvability of theological disputes among private interpreters of Scripture have given occasion, however, to the critics of Christianity.

In his *Critique of Religion and Philosophy*, Walter Kaufmann contends that what holds Christianity together is simply the common *literary body* of myths found in the Bible rather than a single *particular* message. "Christians interpret these myths differently..., but all revere

them."[1] Although current philosophy of religion has asked whether Christian claims are not meaning*less* (since treated as unfalsifiable), Kaufmann's objection is ironically that they are all *too much* filled with meaning. Biblical literature and Christian dogma are, according to him, "overcharged with meaning," suffering from "an excess of meaning,' and thus "essentially ambiguous" - being full of inconsistencies which opposing interpreters can cite against each other.[2] What the Bible says can be twisted this way or that, depending upon the assumptions and disposition of the particular interpreter. Kaufmann claims:

All important decisions come before interpretation, and the selection and exegesis of the texts is dictated by the prior convictions of the exegete.... Theology is the finding of dubious reasons for what the theologian has believed all along.... Doing theology is like doing a jigsaw puzzle in which the verses of Scripture are the pieces: the finished picture is prescribed by each denomination, with a certain latitude allowed. What makes the game so pointless is that you do not have to use all the pieces, and that pieces which do not fit may be reshaped after pronouncing the words "this means." That is called exegesis.[3]

According to Kaufmann, this practice or ritual actually began right with the use of the Old Testament by New Testament writers.[4] Christian theology and with it Biblical interpretation are governed by subjective presuppositions which forever mold and remold an essentially ambiguous and malleable text. What Kaufmann, the scholar, has said is actually a fair summary of what is a more general attitude, one which comes to expression in serious and popular culture repeatedly. A Shakespearean character is made to say, "In religion, what damned error but some sober brow will bless it, and approve it with a text,"[5] while Barbra Streisand sings "I was raised on the Good Book Jesus - until I learned to read between the lines" ("Stony End").

In his book on the history of interpretation, R. M. Grant is not unfamiliar with the subjectivistic difficulty we have noted. Edging close to Kaufmann, Grant agrees that a plethora of diverse meanings reside in the Biblical texts: "The notion that there is a single meaning can be labeled as 'misplaced concretion.' ... There is no single, absolutely final interpretation."[6] He recognizes the "exaggerated objectivity" of the nineteenth century critics of Scripture and admits that every exegetical school has its theological axes to grind.[7] So obvious has the role of assumptions, precommitments, or disposition in interpretation become that Grant states, "Today it hardly seems necessary to insist upon the ubiquity of subjectivity."[8] So then, the subjectivistic problem is taken as an obvious datum with which Christian scholars must wrestle.

Although it is commendable that evangelical thinkers do not wish to capitulate to the arbitrariness and relativism which the subjectivistic aspect of interpretation threatens, it is to be feared that we can often hide from ourselves the true proportions and strength of the difficulty. For instance, Sproul's book, *Knowing Scripture*, freely admits a lack of agreement among Christian scholars concerning rudimentary principles of Biblical interpretation, but then

somehow treats the question of "Objectivity and Subjectivity" merely as though the subjective factor or element can be restricted to finding a *relevant application* of the text to one's life *subsequent* to gaining an *objective understanding* of it.[9] The problem posed by the function of presuppositions in the very hermeneutic by which one first gains his understanding of the text cannot be brushed off simply with an encouragement to place a restraint on our tendency toward eisogenis by checking with the work and expertise of other people (who have likewise been guided by presuppositions open to dispute). We will gain little as evangelical scholars by ignoring the genuinely difficult questions.

Returning to Grant, let us note how he treats the difficult question of subjectivity in interpretation. Historically, the disapprobated tendency toward arbitrariness, relativism, or scepticism in human thought has been resisted through development of epistemological and scientific positions. In view of Kaufmann's kind of criticism, then, it is hardly surprising that Grant broaches the question, "Is biblical interpretation 'scientific'?"[10] He immediately insists that the answer must be both no and yes. By that he means that the overall task of hermeneutics has two successive phases, an earlier scientific analysis (vis., textual and literary criticism) and then a subsequent discussion (viz., historical criticism and theological synthesis) which "passes beyond" what may be considered scientific.[11] Even here the subjectivity of interpretation can be "over-emphasized," says Grant, because the "hermeneutical circle" can be broken by reason and tradition once we recognize that *sola Scriptura* is unacceptable.[12] Thus Grant maintains that Biblical interpretation *is* in some ways "scientific," but in other ways (conspicuously in theological synthesis) it is *not*.

Science: An Honorific Conception

An evaluation of Grant's claim requires that we understand his *conception* of what it is for a discipline to be "scientific." His meaning is not obscured from the reader. Paralleling his no-and-yes answer to the question of scientific status, he had earlier written, "interpretation is always subjective as well as objective,: and then in subsequent pages and throughout the book he expresses a series of contrasts wherein an unscientific aspect or approach is set over against a scientific one. By noting the syndrome of scientific elements found in these contrasts (the second member mentioned in the following list of couplets), we can discern Grant's meaning. He endorses the "fruitful tension" between Spiritual interpretation by the believer and historical interpretation by the unbeliever, between controlled and free investigation, between concentration on the "inner story' and on "the story of the world outside," between the approach through Christianity-in-particular and humanity-in-general, and between interpreting in terms of the "strangeness" of Biblical categories and in terms of one's own familiar categories of thought.[13] In addition to these contrasts, Grant explains his conception of a "scientific" discipline quite explicitly as one where "an observer free from presuppositions and prejudices can simply analyze" data and then produce a "hypothesis to explain them" which need not compete with a "multiplicity of hypotheses" which are equally tenable or be threatened with shakiness" under critical questioning.[14]

From these various indicators we can fairly summarize Grant's conception of a study which is "scientific" as one free from personal prejudices (e.g., Spirit guided faith), uncontrolled by theoretical presuppositions (i.e., following simple observational analysis by any human being, believer or not), and thoroughly agreed upon in its methods (i.e., using a virtually uncontested, unshakey, and familiar set of principles). So then, a "scientific" approach is (1) objective, (2) neutral, and (3) invariant. With it the arbitrariness, relativism, or scepticism threatened by subjectivity in a discipline can be countered.

Grant's conception of "scientific" study is anything but idiosyncratic, for it reappears continually in literature. Ramm tells us of those who *disdain* the influence of presuppositions and dispositions on interpretation, calling rather for a "strictly controlled scientific exegesis" which uses "objective criteria." On the other hand, the New Hermeneutic *insists* upon pre-understanding in approaching the text and the need for existential encounter with it, setting these things over against the "neutral, objective, scientific approach" and investigation of the text.[15] These attitudes toward presuppositionless study may be conflicting, but the *conception* of the contrast between study which is "scientific" and study which is not is conspicuously similar. And that conception is not restricted to non-evangelical writers either. In an article written for a collection of essays he himself would edit on *Interpreting God's Word Today*, Simon Kistemaker gives great attention to his subject (even to the point of finely discerning of a tax-collector's numerical interests in Matthew's gospel) and yet quite readily sets an approach which submits presuppositionally to Scripture's self-testimony within the circle of faith *over against* "the inductive approach" (note well the definite article and its significance here) which "view(s) the Bible objectively and scientifically" and thereby makes truly critical investigations of Scripture.[16] As evangelical scholars we all to often can strain at technical gnats, while swallowing philosophical camels. We can popularly, with Sproul, set "the inductive basis of historical-empirical evidence" over against the simple alternative of "subjectivism,' and speak categorically of "objective evidence rather than personal preference." We propound *a certain view of science* when we can speak singularly and prescriptively of what "the scientific method demands," mention without flinching "the assured results of modern scientific inquiry," find security in the defense that a Biblical doctrine "conflicts with no known natural scientific law," and contrast the obscurantist theologians of the day with Galileo as though he were the model of scientific objectivity and presuppositionless inquiry.[17] With Grant we portray "science" as objective, neutral, and invariant.

The Want Of Justification

There is good *reason* to call into question the uncritical conception of science which has been encountered above. Given the new prominence of hermeneutics today - which is broadly to say, of a general philosophy of knowledge or science - and the dependence of theology's status and fate upon it, and given the dependence of one's answer upon a conception of science in

answering the challenge that Biblical interpretation is unscientifically subjectivistic, we also have good *motivation* for critically questioning that conception of science which has been encountered above. We should see that science or theorizing in general cannot legitimately claim to be a fully and objectively justified enterprise, any more than it can credibly be seen as an example of unity.

At least two separate models of science can be countenanced in the past and current history of Western epistemology. I will call them the "foundationalist" model and the "pragmatic" model. Foundationalism, the more traditional attempt to formulate theories which - in the face of scepticism's challenges - eliminate arbitrariness (prejudice, relativism, unwarranted conjecture), aims to obtain cognitive certainty beyond psychological assurance by anchoring one's beliefs in some kind of secure basis, certain unassailable propositions. From that foundation we can conduct intellectual inquires according to strict and reliable methods of reasoning, admitting to our system of thought no proposition which is not certified by the foundation or by other foundationally certified beliefs, and thereby guaranteeing ourselves an accurate depiction of the world. Such a model of science has enjoyed numerous devotees: Aristotle, Descartes, the logical positivists, and many more, but foundationalism is especially seen as the banner of the Enlightenment. Reason must be given a secure starting point so that knowledge may be gained in the absence of cognitive imperialism (arrogance, dogmatism, fideism) and in the face of critical scepticism, thereby assuring that *not* all convictions have an equal claim to acceptance and, accordingly, *requiring* that conflicts be settled by argument rather than passion or force.

Common-sense foundationalism is found in G. E. Moore's "A Defense of Common Sense," Wittgenstein's *On Certainty*, and Malcom's *Knowledge and Certainty*. The position is that certain universal and compulsively held beliefs about readily observable public facts/ (e.g., that there are other people) are basic and presupposed by all other beliefs. As the final courts of appeal in all inquiries and disputes, these common sense beliefs are logically beyond the possibility of correction. However such beliefs, we must recognize, offer a jeopardized - and thus unsuccessful - candidate for foundational beliefs. They do not provide infallible knowledge, but only incorrigible knowledge. As unavoidably imposed as common sense beliefs may be, there is no guarantee that things actually are as they seem to us to be. In addition to this phenomenological weakness, this version of foundationalism suffers great embarrassment by the faulty and conflicting ways in which common sense beliefs are identified and enumerated.[18]

Perceptual foundationalism maintains that *infallible* basic propositions which *transcend* beliefs imposed upon us and give an objective depiction of things are found in sincere, first person, present tense reports of perceptual experiences (e.g., "I now seem to be seeing a yellow pencil"). Advocates would include Chisholm in *Perceiving*, Firth in the *Philosophical Review* (vol. 61, 76) and *Journal of Philosophy* (vol. 53, 61), Butchvarov in *The Concept of Knowledge*, and

Pollock in *Knowledge and Justification*. They find the absence of any mediating agency between the knowing person and the private psychological state of which he is aware a guarantee that misinterpretation is precluded and one cannot be misled. The strength of direct perceptions is their non-inferential character. The weakness of depending upon these alleged non-inferential certifitudes, however, is far more compelling.

Perceptual foundations for knowledge are not universal; not every human being can perceive (e.g., the blind), and not every use of perception turns out to be veridical (e.g., optical illusions). Our perceptions are not defeasible (by reference, e.g., to "normal perceiver" and "normal circumstance") either, for we cannot be certain that we know every possible distorting condition or even that none of the known ones presently obtains (since perception would then be checked for normalcy by the possibly abnormal perceiving itself). The problems of delusion and illusion preclude our having certainty that it is some *external* object, which is appearing to us in the way that we are perceiving (e.g., the case of after-images).

Wittgenstein's argument against the possibility of private language contends that the identification and reidentification of one's own psychological states presupposes some public reference point, in which case the report of a perception would not be the *final* foundation of knowledge. By arguing against the analytic/synthetic distinction's viability, Quine and Watkins have indicated that neither term can be elucidated without reference to the other, in which case conceptual and empirical components are unavoidably involved in every proposition (see Quine's *From a Logical Point of View* and Watkin's article in the *British Journal for the Philosophy of Science*, vol. 10). Both Wittgenstein and Sellers (*Science, Perception and Reality*) have faulted the empiricist theory of concept formation, wherein the forming of the association between a color and a word, for instance, would be paradigmatic of direct knowledge. It has been pointed out that acquiring any one concept is possible only when the person *already* poses other concepts (e.g., shape, sound, location, in addition to color) and can make judgments of similarity and identity. If, then, concepts cannot be acquired one by one, non-inferential or direct knowledge is precluded. With the breakdown of the analytic/synthetic distinction and the refutation of the empiricist theory of concept formation, we must recognize that all observation is unavoidably theory-bound, never being purified of all interpretation, and thus not being removed from the possibility of error (cf. Quine's *Word and Object* and Popper's *The Logic of Scientific Discovery, Conjectures and Refutations*).

Of course, to speak counter-factually, even if pure and infallible perceptual foundations could be acquired, what would be the secure or reliable method of reasoning by which we could build a system of thought outward from the foundations? *Deduction* would not allow us to accept the most elementary *universal* propositions about physical objects on the simple basis of *particular* perceptions; so we could not even be said to know, for instance, that all crows are black. *Probabilism* or inductive reasoning can show neither that its required assumption (that nature

is uniform) is known with certainty *nor* that it is even *probably* true, for in that case it would offer an *inductive* argument in order to warrant the very premise needed *to warrant inductive* argumentation. *Falsificationism* as a method of reasoning abandons any hope of providing a criterion for being warranted by foundational certitudes; it offers instead the weaker condition of a belief's being *rejected* according to the foundation. But even this weakened approach is of little help to the scientist. No belief is understood in isolation of other beliefs, and no belief meets the tribunal of sense perception individually. When a man who believes that he is dead is presented with the counter-evidence that he bleeds, he can choose to abandon the belief that he is dead, *or* he can reject the belief that dead men do not bleed (or any number of other beliefs which form of the context of the originally mentioned belief). Therefore, falsification does not enable us to build a system of knowledge outward from foundational certitudes, for those foundations can never *decisively* falsify any *particular* belief. In the context of empirical science, the target for the arrow of *modus tollens* is hopelessly elusive (see Lakatos' article in *Criticism and the Growth of Knowledge*, eds. Lakatos and Musgrave).

Failing to provide a secure starting point for reason or a reliable method for the growth of knowledge, the foundationalist model of science succumbs to scepticism and leaves the justification of one's fundamental assumptions an open question. The ideal of presuppositionless objectivity is shown to be an illusion, and the threat arises that there is no ultimately rational way to decide between conflicting claims (e.g., between medicine and quakery). Hence scepticism has emerged as a strong candidate in modern epistemology, being advocated by Unger's *ignorance* and ultimately conceded by Harman's *thought* and Leherer's *knowledge*. The implication that all systems evidence equal cognitive merit has been shamefully welcomed by epistemological anarchists (e.g., Feyerabend's *Against Method*) and fideists (e.g., Phillips' *Faith and Philosophical Inquiry*). If science is found wanting in justification, then arbitrariness can no longer be countered or disapprobated.

To the sceptic's challenge that reasoning and its products are unreliable, a response more recent than foundationalism has developed which can be called the pragmatic model. Here it is contended that, because scientific methods have been seen to have a greater potential for rendering beliefs that are true and successful than other procedures, the standard for judging rationality should be the actual logic of scientific inquiry as currently practiced. Some of the most prestigious philosophers of our day advocate such an answer (e.g., Quine, Sellers, Popper), and certainly no intelligent person today wishes to deny the successes of science. Nevertheless, there clearly exist(ed) people who would ordinarily be deemed rational and yet know (knew) nothing of the scientific practices of our own culture or era, and it would be a resort to desperation to suggest that they are (or were) not really "rational." More importantly, it has been shown repeatedly throughout the history of philosophy that science itself rests upon presuppositions (e.g., general organizing principles of experience) which are neither true by definition nor evaluated by experience (since it is *their* role to evaluate experience instead). This has been observed in the case of Aristotle's categories, Kant's synthetic *a priori* principles, and Collingwood's absolute presuppositions. That science depends upon presuppositions which

in the nature of the case it cannot justify by its own methods has been taught by Plato, Descartes, Berkeley, Hume, and a host of others - so much so that it ought to be a commonplace among students of philosophy by now. Therefore, to meet scepticism head-on and to legitimate science, one will be forced to do philosophy - in which case, if the presuppositions of scientific practice can be justified at all, *philosophy* would more appropriately deserve to be taken as the paradigm of "rationality."

The common justification for science and its assumptions which concerns us now is that scientific inquiries as presently practiced are *fruitful* - solving important problems and enabling us to cope with the world. The indebtedness of modern proponents of this answer to Pierce and C. I. Lewis is rather obvious. With science we may better achieve our goals. The pragmatic answer rests, of course, upon the previous acceptance of a certain goal, and thus at this point we must not become intellectually lazy but press on and ask critically about the rationality or arbitrariness of *that choice*. We can grant the superiority of science's problem-solving tools only after we are convinced that science is dealing with the right problems in the first place. So then, why should our goal be that of coping with the environment, instead of the alternative or perhaps more weighty aims of mystical union with nature, interpersonal rapport, appreciation of beauty, etc.? What justifies adherence to the particular goal chosen by empirical scientists? Perhaps that goal is simply arbitrary - consequently *re*introducing relativism and scepticism.

To avoid arbitrariness and question-begging an external justification becomes necessary, forcing the pragmatist to go *outside* of epistemology and "naturalize" his procedures. This justification is descriptive in nature, claiming that a given agent *succeeds* in getting to his given goals if he adheres to a given system or method. When the agent is an individual and the goal is dictated by self-interest, epistemology is reduced to *psychology* (e.g., Quine's "Epistemology Naturalized" or Paget's *Genetic Psychology*). If the agent is a species and the goal survival, epistemology reduces to *biology* (e.g., Popper's *Objective Knowledge* and Toulmin's *Human Understanding*). Taking the agent as a social class and the goal as its domination over other classes, epistemology reduces to *sociology* or history (e.g., in Marxist epistemologies and the sociology of knowledge). When the agent is a culture with the goal of serving its conventional aims, epistemology is reduced to *anthropology* (e.g., Winch's *The Idea of a Social Science*). The trouble with all of these naturalizing epistemologies - which reduce to one branch of descriptive science or another - is that they answer the request for a justification of science by *skirting* it. Epistemology is a normative endeavor, not simply a descriptive enterprise which connects agents, methods, and goals. The quest for justification is an *evaluative* one just because the alternative goals need to be appraised as to their respective values. The recommendations that epistemology be naturalized are but contemporary confessions of despair in solving ultimate issues of justification, leaving us without a way to rationally criticize or warrant our goals.[19]

The Lack Of Unity

If the common conception of science as a presuppositionless and strict discipline which overcomes sceptical relativism by offering justification for its assumptions and procedures is now recognized as mythical in character, the view of science as a settled and invariant manner of argumentation fares no better. The whole field of meta-argumentation (or the philosophy of logic) has been opened up for valuable discussion since the days of Russell and Whitehead's *Principia Mathematica* and the early Carnap's teaching. In that former era the formalization of logical notation and the formal, concise statement of the principles of logic, as well as the defense of the logistic thesis that mathematics can be reduced to simple logical truths which display a true-under-all-circumstances character in virtue of their triviality (saying nothing informational about the world of experience), engendered the view that logic is a formal calculus which does not vary from one field of study to another. From that position the logical positivists went on to hold that all factual claims must be verifiable by set empirical methods, which would likewise break down distinctions among the various sciences - once scholars rejected the residual superstitious premises of certain disciplines (such as the assumption of an "inner world" studied by psychology). What arose was the movement for a unified science which portrayed the academic division into branches of study as a pure convenience since all empirical sciences were fundamentally one in method. The settled and unitary character of science, however, could not long be maintained.

In *Dilemmas* Ryle accurately observed that the positivists were not dealing with logic as a whole but only with a *subsection* of argumentation - one which turned on the meaning of certain terms like 'some', 'all', 'and', 'or', etc. That is, invariant "formal" logic had been allowed to swallow up the whole domain of informal logic, wherein arguments turn on *different* terms and concepts. The investigations and arguments which commonly occupy scholars in the various scientific disciplines display a pattern in each respective field that is now followed in others. Accordingly, Ryle said:

> There is no such animal as 'Science.' There are scores of sciences . . . . It is not necessary or expedient to pretend that they are fellow-workers in some joint but unobvious missionary enterprise. It is better policy to remind them how different and independent their trades actually are. . . . The settlement or even partial settlement of a piece of litigation between theories cannot be achieved by any one stereotyped maneuver. There is no one regulation move or sequence of moves as a result of which the correct logical bearings between the disputing positions can be fixed.[20]

There are, then, many logics and not simply one single calculus for weighing arguments.

The Uses of Argument by Toulmin[21] furthered the case against *taking logic as a formal calculus to be the whole* of the discipline, thereby absorbing every *kind* of "logic" into a mathematical ideal or subordinating it to such purposes. It is descriptively rare for the various branches of science to use the formalized, mathematical ideal of logic, and even there it is a confused practice to identify or conflate analytic arguments (wherein confirmation rests solely upon the backing) with deductive arguments (which make no effort to establish new warrants) and then with formally valid arguments (in which the conclusion merely rearranges the terms found in the warrant and data premises). Logic should be likened to a court of law which establishes procedures for evaluating different kinds of evidence, for the obvious fact about *working* logic is that argumentation *differs* according to the subject matter in view. All arguments will use *warrants* (hypothetical in nature) as a kind of major premise, particular *data* as a kind of minor premise, *backing* for warrants (factual and categorical) in the face of rebuttals, and arrive at *conclusions*. However, from field to field, different types of backing will be appropriate, and there will be varying criteria for evaluating justifications. Arguments in the various fields will use the same vocabulary of "necessary," "probable," and "possible" to describe the force of different argument conclusions; however, the criteria for using those terms will vary. Consequently, with each scientific discipline utilizing its own patterns of seeking certainty, and with conclusive arguments no longer being artificially restricted to unsubstantial subject matters (unempirical formalities), inter-field variance should be recognized as to what counts as "good argumentation."

Some recent philosophers of science have argued further that *within* a particular scientific discipline it is not possible to make a decisive choice between equally coherent alternatives as to methods and conclusions (see Polanyi's *Personal Knowledge* and Hanson's *Patterns of Discovery*). In particular Kuhn's *Structure of Scientific Revolutions*[22] goes beyond inter-field variance in science to establish the fact of intra-field variance as well; argumentation will differ from school to school within a particular field of science. To understand the working history of science, Kuhn speaks of incommensurable paradigms which espouse unique views on the basic issues of a field, offer a model for problem-solving, stipulate fixed points of conviction, and constitute a disciplinary-matrix of commitments to particular standards and methods. When such a paradigm triumphs over its competitors within a field of science, it launches a period of "normal" scientific activity and investigation where series of problems are dealt with according to the pattern assumed by the paradigm. However when normal science runs into, not simply counter-examples, but disturbing anomalies which are sufficiently complex to render the paradigm unworkable or unsatisfactory, the subsequent tension within the field of study will stimulate renewed debate over basic epistemological questions and encourage random experimentation to be carried out. Eventually, when the old paradigm is set aside - not without various non-rational means of resistance being utilized to preserve it - a revolution within the field takes place which may be likened to a gestalt switch, a new paradigm gaining ascendancy with its own standards of evidence, pattern for procedure, etc. Due to the reconstruction of its fundamental concepts and criteria, a reconstruction of the field of study itself is actually accomplished. Because competing paradigms are incompatible and weigh evidence or

argumentation differently, the new paradigm does not succeed by direct verification; competitors argue with each other at cross currents until incidental and "non-scientific" factors influence a conversion to the new outlook, style, and methodology.

We have surveyed two widely held models of science: the foundationalist model and the pragmatic model. Neither could be said to be successful in offering a complete and objective justification for beliefs and methods in the scientific quest for knowledge. We have also surveyed the progressive recognition that rational argumentation and scientific method are anything but universal, settled, and invariant from field to field or from school to school. Our survey has led us a great distance away from the ever popular conception of "scientific" study as objective, neutral, and invariant which is all too easily promulgated in present day theological literature. Hoping to defend the realistic truth of their commitments by acquiescing to, and then working with, this fictional ideal - guarding whatever "scientific rationality" they could against charges of subjectivity and relativism - theologians have come to swallow proverbial "pie in the sky" of a more genuine variety.

Logic: Last Ditch Stand?

At this point it might easily be thought that the want of justification and lack of unity which have been encountered throughout the other scientific disciplines is at least uncharacteristic of formal logic. Surely *there* one can find a consensus on rational, objective method which attains certainty of its own (limited) kind. Such minimal confidence that *one* kind of reasoning achieves the strict, presuppositionless invariant ideal of scientific objectivity is commonly expressed in our evangelical literature of both a scholarly and popularizing variety. The repeated sentiment is that formal logic has a unique ability to generate absolute epistemological certainty. It is a neutral and settled discipline. The extent to which evangelical writers in apologetics, for instance, have been captured by this picture of logic needs to be widely appreciated. It is virtually a platitude in our circles - serving, I fear, to confuse and intimidate believers regarding important issues of epistemological certainty pertaining to their faith (and its defense).

Two important and conflicting approaches to apologetics are represented by Montgomery and Clark; yet their attitude toward formal logic is in harmony. *Montgomery* speaks of "the common rationality (the inductive and deductive procedures) which all men share," and he insists that the "distinction between analytic (purely formal) and synthetic (content) judgments" shows that "to demand absolute certainty is to obtain pure formality and thus no knowledge of the world at all." Pursuing this discredited philosophical prejudice that there is a common scientific method which recognizes a distinction between formal-analytical and empirical-synthetic truths, he expresses the reverent view of logic as unalterable and as yielding absolutely certain proof. "Only deductive logic and pure mathematics provide 'apodictic certainty,'" "absolute truth. . . is possible only in formal logic," and "only the tautology (if A then A) can be *proved*

true." By way of contrast, "the moment the realm of experience is introduced, 'absolute,' 'unalterable' results become impossible," so that "we must depend on probability," for "in the case of every theory involving statements of fact, PROOF is impossible."[23]

Likewise *Clark* teaches that, while certainty is impossible with empirical science, memory, common opinion, etc., the laws of logic cannot be questioned since they are universal, necessary, and known *a priori*. The eternal principles called logic are "the prerequisites of all argumentation," being basic to every aspect of theorizing if "irrationalism" is to be averted. So settled is logic for Clark that he sees it as "God thinking" and as "the basic image of God in man." To deprecate or curb logic is, accordingly, pious stupidity, irrationalism, and sin. Any improvements which are to be made in the science of logic, moreover, "must build upon Aristotelian principles." For Clark, therefore, logic is "the most certain of all principles" and "the only legitimate test of reason"; "there is no method of understanding superior to deduction."[24]

Even scholars who do not align with Montgomery's extreme empiricism or Clark's extreme rationalism come to propound this extreme view of logic. For instance, the moderate *Carnell* restricted demonstration to logic, mathematics, and geometry, asserting that historical study could yield only probability and not geometric certainty. The price logic pays for its objective, settled, and certain status is that of being confined to trivial formality. "Pure demonstration is operative only within a system of formal symbols, as in logic and mathematics." "As we move from formal truth . . . to material truth . . . the threat of prejudice intensifies and the likelihood is dispassionate judgement abates."[25]

The view of logic suggested by these representative writers is not the sole possession of those engaged in serious evangelical scholarship at a fundamental level; popularizing presentations indicate its prevalence as well. *Sproul* tells his audience that logic is the uniform "basis for all science," and repeatedly he speaks as though there are obvious and settled "canons of logical, formal analysis" which constitute "the test of logic" (singularly expressed); thus it is important at a primary level that one understand logic and thereby avoid the unacceptable "problem of ignorance of the laws of logic." Those laws are explicitly portrayed as restricted to "formal truth" and "internal consistency," as well as being "objective" and "non-negotiable." These standards are beyond reasonable question but limited to formal certainty. "The only way we can have absolute philosophical certainty about anything is in the pure formal realm. Now unfortunately that doesn't get us into the real world. And as soon as we get into induction we get into the level of uncertainty . . . . That word 'certainty' is used at least two different ways: (1) in terms of philosophical, rational demonstrability which is compelling. Now unfortunately, only formal logic and deduction can do that" (with the second sense for 'certain' being that of psychological assurance).[26]

Hoover similarly speaks of deduction as "the most certain form of proof," and as "perfect proof" which renders "inescapable conclusions." Analytical propositions, he asserts, are "absolutely certain but singularly uninformative," even as Russell and Whitehead had said. Still logic is the necessary basis for *all* argumentation which (even in the synthetic realm) is to be meaningful.[27] Examples could be multiplied further of this basic "conformism" to the settled science of formal logic which suggests that it "is and always will be all right just as it is." As Wolterstorff further observes (painfully but accurately), given such a conformist attitude "contemporary Christian thinkers are brothers under the skin with the logical positivists"[28] - all the more when the attitude endorses implicitly the formal/empirical dichotomy and is tied to a unity of science outlook.

The attitude is so easy to acquire in secondary literature and introductions to formal logic, and is so cherished for various reasons, that a serious look at the actual phenomena of logical study, if one has the stamina to carry it out, holds the potential for an awakening which can be described as nothing other than rude. It makes us realize that absolute certainty, full justification, widespread agreement, and presuppositionless neutrality have been mistakenly taken for granted regarding formal logic. Serious confusion and disagreement within the discipline of logic threaten it as a model of scientific study, for key conflicts seem irresolvable, especially in the absence of any clear account of the proper object of logical study and the appropriate evidence for claims about it.

The apparent unity of logic which has been presented to many people is usually achieved through revisionist surveys of the field and through sociological prejudice. The "logic" which has been of interest to scholars throughout history is in fact many things, although some writers would hardly let on that it is so. Twenty-three centuries of Indian (Hindu and Buddhist) logic are commonly omitted altogether, despite the significant fact (among others) that therein the three traditional laws of thought from Aristotle have varying validity depending on whether we deal with negations of the *nisedha* (e.g., 'He will-not love') or *paryudasa* (e.g., 'He will not-love' or 'Not-he will love') varieties. The "logic" of thought-hygenic interest (Descartes), of all-encompassing philosophic interest (Kant, Hegel, Bradley, Husserl), of empirical interest (Mill), of mathematical interest (Boole, De Morgan), and of formal interest (Russell and Whitehead) are rarely even mentioned for distinguishing. Logics which deal with other basic concepts than quantity, disjunction, etc. are easily ignored by popular writers (e.g., Deontic, Doxastic, Modal logics). And even when we restrict our attention to recent, Western, formal logic - first-order, predicate logic with truth-functional connectives - the *illusion* of unity often arises either from an unwillingness to raise questions, a concession to pedagogical utility, or from exclusion of those who hold divergent convictions from an academic guild (seeing opponents as not even qualifying as true "logicians" or as being too preposterous to invite to academic conferences on logic).

Because formal logic has been the focus of the most intense philosophical research over the last decades, we will discuss issues germane to it. The unimpressiveness of the *prima facie* agreement on many logical rules or calculations here should be appreciated, not only because the material identification, translation, or interpretation of formal laws in natural languages (e.g., English, German) remains corrigible, but even more because the truisms on which logicians have agreed seem utterly impotent in settling (or even tending to settle) the major quarrels which lie immediately beyond those truisms. That "formal logic" is a "science" in the honorific sense will turn out to be a pretense of huge proportions. It will be assumed here that our alleged "science" *minimally* aims to explicate in precise terms the various intuitive notions of "logical truth" and then by means of rational evidence pick out those truths for codification in a formal system by which the validity of arguments can be tested. It will turn out, though, that there is serious disagreement as to what logic is *about* and, accordingly, how logician's claims should be *warranted*.

Let us begin, however, simply by inquiring, *what* are logical truths, and how is their necessity to be characterized? Wittgenstein's characterization in terms of tautologies (true under every interpretation of component propositions in the truth tables) and Carnap's characterization of L-determinates were revisions or explanations of what Leibniz meant by "true in all possible worlds." Quine wrote that logical truths are such that their truth depends only on the logical constants (syncategormatic terms) employed, rendering consideration of their descriptive terms inessential. Ryle saw logical constants as topic-neutral concepts which are supported solely by their logical powers, as discerned in the entailments which they advance. The trouble with one and all of these characterizations is that they will explain what constitutes a logical truth only to those who *already understand* the notion, for it is repeatedly used or assumed in the characterizations themselves (e.g., Leibniz was interested in all *logically* possible worlds, Quine gives no general characterization of logical constants but simply *enumerates* them, and Ryle's interest in *entailments* assumes the very logical truths which are to be explained).

Well, whatever "logical truths" are, let us at least ask *which* truths are the logical truths. The history of logic does not encourage us that an agreed upon list can be formulated by all "reasonable" men, for to our embarrassment this history is strewn with bitter controversies and conflicts. The reason for this situation is not hard to find: it turns out that the choice of logical truths is affected by numerous other kinds of questions, for instance the place of ordinary language analysis, the role in intuition, the selection of a metaphysical entity as the subject matter of logic, the understanding of reference, or of modality, or of temporality, the adequacy of nominalistic analyses of "all" statements, the nature and function of the three traditional laws of thought, etc. Not all of the disagreements can even be valued as profitable in a heuristic fashion. If one approaches logical study reverently, expecting sober agreement and stability of approach, he will have to become acquainted with the conflicts separating De Morgan and

Hamilton, Mansel or Bradley and Boole or Jevons, Dewey and the logical atomists, Quine or Carnap and Strawson or Wittgenstein.

Philo and Diodorus argued over how to define implication, (respectively) in a truth-functional or temporalized sense, even as William of Sherwood and Peter of Spain would disagree later. Ramus hotly disputed the syllogisms of Aristotle, Valla opposed the third figure of standard syllogistic, the fourth figure was eliminated by Averroes, Zabarella, De Morgan and Jevons, and the whole issue of the syllogism was a fertile ground for continuing debates between the Cartesians and Schoolmen. Should singular propositions be admitted to syllogistic (Hospinianus, Russell) or made equivalent to universal ones (Leibniz, Wallis, Euler)? Are logical operations of subtraction and division uninterpretable (Jevons, Schroder) or significant (Venn)? Should a proposition such as 'All A is B' be interpreted extensionally as 'All A's are contained in B' (Hamilton, De Morgan, Boole) or intensionally as 'Property A contains property B' (Leibniz, Lambert, Jevons, Bradley)? The question of whether universal or categorical propositions have existential import, overlooked by Aristotle, could not be ignored after the discussions of Abelard, Leibniz, Venn, Brentano, and others. Discord has existed over negative terms, definite descriptions, and null classes (as the writings of Russell alone testify). Not only must we countenance these and other *disagreements* in the study of logic, we must observe that there has been *no general agreement* even as to the *method* by which the disagreements could be settled. Since these disagreements define effect the acceptance of logical rules or the validity of arguments, they are surely unsettling in a field allegedly characterized by invariant, obvious, and absolute proof.

The tendency will be for the dogged advocates of an honorific view of the discipline of logic to retrench, I suppose, and contend that *at least* the "three laws of thought" are objectively certain and beyond question. Identity, contradiction, and excluded middle will be the new, restricted realm of certainty. But little hope can be offered for this revised confidence in "scientific" objectivity and agreement. The ancient Epicureans were vigorous in rejecting the law of excluded middle against Stoic logicians. Medieval scholastics, considering the question of truth in statements expressing future contingencies, were led to reject excluded middle (and to suggest a many-valued logic, as did Peter de Rivo). And modern physicists who have been concerned with philosophical aspects of quantum mechanics have also rejected the traditional law of excluded middle in logic. Although some *metaphysical* positions cast doubt upon the acceptability of the law (e.g., an Aristotelian view of potentiality in which a thing can be both potentially-B and not potentially-B, or a Hegelian view where things are historically defined over against their negations), it is particularly in terms of an *epistemological* outlook that the law has been found unacceptable in the last century by the intuitionist school of mathematics or logic (e.g., L. E. J. Brouwer, A. Heyting, in *Philosophy of Mathematics*, eds. Benacerraf and Putnam).

Intuitionist logicians propound a strong form of verificationism, saying that only propositions which can actually be *recognized* as true or false can be admitted to be meaningful; it is not enough to know what the conditions of verification could conceivably be, if we could never be *in a position* to tell whether the verification is actually accomplished or not. This emphasis leads to unique explanations of the logical constants, resulting in a whole new network of inferences which repudiates classic cases of inferential proof. In particular the truth-table definition of 'or' becomes inadequate, for it just may happen that we are not in a position to be warranted in asserting A or in a position to be warranted in asserting B. *Even if B* is taken as the *negation* of A, we cannot a priori assume that we *must* be in a position either to verify *or* to falsify just *any* claim; some claims are simply undecidable. Consequently the intuitionist school of logicians reject the law of excluded middle, the law of double negation, and proof by reductio ad absurdum (i.e., deducing a contradiction from the negation of your thesis). Indeed, scholars working on many-valued logics (in contrast to the bivalent traditional logic where every proposition is either true or false) have shown that any number of values can be assigned to the truth tables as an interpretation of a formal system of logic, and the system will attain formal adequacy nonetheless. Intuitionist and deviant logics are evidence that the traditional laws of thought are unsuccessful candidates for parade examples of the objective and invariant certainty of formal logic.

Now then, we do not have a rational and certain answer to the question, *what* are logical truths? *Nor* do we have such an answer for the question, *which* are the logical truths? There are embarrassing conflicts over those truths, so we cannot help but go on and ask *how* logicians come to *know* or be *confident* about any particular logical truth. Russell and others have contended that these logical truths are known a priori, independent of experience. Why, then, is there no universal agreement among reasonable men about them? When, then, do paradoxes arise in their use? For instance the theory of sets, which is fundamental to modern formal logic, allows for the *set* of all sets which are *not* members of themselves; this creates a contradiction because the set in question, if it *is* a member of itself, is *not* a member of the set mentioned, whereas if it is not a member of itself, then it IS a member of the set mentioned - thus either way, it is both. Apart from ad hoc rescuing devices, this self-contradiction in the very foundation of formal logic allows for the deduction of any and all propositions, which is more than unacceptable for a system of *logic*. Furthermore, if logical truths are justified a priori and are thereby universal, unchanging, eternal truths, why should they in fact (or why should they be thought to) apply repeatedly in the realm of contingent experience? Why should they be assumed to have anything to do with history, or why should reasoning about *history* have these "laws of *thought*" imposed upon it? Moreover, it is strange that, for an a priori system like elementary logic (containing only truth-functional compounds and singular sentences or existential and universal generalizations involving individual variables), it has been proved that it is impossible to gain a *decision procedure* for judging the validity of the system as a whole (cf. A. Church, *Journal of Symbolic Logic*, 1936).

The justification of logical truths along a posteriori lines was proposed by Mill; we gain confidence in them through repeated experience, which is then generalized. Of course, some of the suggested logical truths are so complex or unusual that it is difficult to believe anyone has perceived their instances in experience. But even restricting attention to the others, it should be seen that if their truth cannot be decided independently of experience, then they actually become contingent and lose their necessity. Why should a law of logic which is verified in one domain of experience be taken as true for unexperienced domains as well? If the a priori and a posteriori lines of justification for logical truths are unconvincing, perhaps these propositions or rules are purely a *linguistic convention* about certain symbols (Ayer, Wittgenstein); the laws of logic would not be taken as inexorably dictated, but rather *we* impose their necessity on our language. Why, then, are not contradictory systems deemed equally rational? Why are arbitrary conventions like the logical truths so useful in dealing with problems in the world of experience? It is certainly odd, also, that if the system of elementary logic is conventionally chosen, there should be a proposition which is *true* (of which we are intuitively convinced) *and yet unprovable* according to the axioms - which is what Godel famously demonstrated (in his article, "On Formally Undecidable Propositions . . . , " originally 1931).

Although the preceding discussion only suggests a *program* for cross-examining various alternative ways of justifying logical truths, it does give some reason to think that this issue is not an absolutely clear and certain matter in philosophy, and it does remind us that the approaches taken to the question are far from uniform. If the question cannot be clearly answered, we can well go on to ask, *does* the logician have a rational basis for his claims? When we consider that the lectures and essays by logicians are not likely filled with an uninterrupted series of tautologies, we can examine those propositions which he is most concerned to convey (e.g., "The Barbara syllogism is a valid form of argument," "A proposition has the opposite truth value from its negation"), and at least ask the more general question, what *type* of evidence does he have for such teachings? Is it the same as the sort of evidence utilized by the biologist, the mathematician, the lawyer, the mechanic, the artist? How different is it from these types of evidence? Anyone who reads the relevant contemporary literature in the philosophy of logic will once again be impressed with two things regarding such questions about the type of evidence available for logicians' claims: first, some authors fail even to *reflect* upon them, and second, among those who do there is rank *Disagreement*. Is this *really* the paradigm of objective, settled, rationality?

The variant approaches to the *type* of evidence we have for logicians' claims really traces back quite naturally to another question for which logicians offer conflicting answers - namely, the metaphysical question of what *kind of entity* is mentioned in logicians' claims. If categorically *distinct* types of *objects* are thought to be involved, then necessarily categorically *distinct modes* of cognition or methods of verification will be claimed as well. For instance, should a materialist and a spiritualist agree as to the evidential basis for the claims they will make, one would surely be confused. Plato's realism and rationalism go hand in hand, just as do Hobbes' nominalism and empiricism. Thus metaphysical commitments regarding logicians' claims will be quite

relevant to the types of rational support logicians offer for those claims. (Those who wish to resist this truth should consider if their view, that the nature of reality has no bearing whatsoever on logical truths and functions, is not itself a highly dogmatic, metaphysical commitment.)

When we turn to the specification of the ultimate subject matter in the study of logic, we find unquestioned invariance (e.g., Pierce claimed that there were at least a hundred definitions of logic). To the general question, what basic type of entity is mentioned in logicians' claims?, traditional answers include: (1) inferences, which are comprised of judgments made up of concepts (e.g., L. J. Russell, Wm. Thomson, J. G. Hibben), (2) arguments, comprised of propositions made up of terms (Bolzano, Mill, Bosanquet, W. E. Johnson, C. I. Lewis), or (3) proofs, comprised of sentences made up of names (Hilbert, Carnap, Quine). Especially today in the philosophy of logic do the best minds in the field, *by their own admission*, talk about utterly different things with radically divergent kinds of properties, relations, and modes of cognition. As to the entity which is mentioned in logicians' claims, Frege took the bearer of truth to be a *proposition* (cf. *Mind*, vol. 65; *Philosophical Writings of Gottlob Frege*, eds. Geach and Black) which was existing independently of thought and discourse as a non-sense-perceptible object "grasped" by a special mode of cognition. Strawson takes it to be a *statement*, an act of utterance involving words, reference, and some kind of internal relations to appropriate circumstances (cf. *Introduction to Logical Theory*); it is not independent of thought and discourse, but it is non-sense-perceptible. A third major kind of answer offered today holds that the bearer of truth is a *sentence*, an event of utterance comprised of the physical phenomena of sound sequences interrelated by conditioned response (e.g., Quine, *Philosophy of Logic; Word and Object*); contrary to Strawson, they have no internal relations and are not immaterial, and contrary to Frege, they are not existing independent of discourse. As the fundamental entity dealt with in logicians' claims, *classes or sets* are proposed by Putnam (cf. *Philosophy of Logic*); although they are seen as abstract, it is awkward to think of them as the bearers of truth.

The unsettled nature of the discipline of logic is nowhere more clearly indicated than in the fact that the leading scholars in the field cannot even agree as to (1) *what* their claims are about, or (2) what kind of rational *evidence* can be offered for those claims. What little, trivial agreement might appear to be found in certain token inscriptional sequences similar from writer to writer (e.g., "If A is B, and if B is C, then A is C") are emptied of any rational significance by differences which are as *fundamental* as those that have been noted. Morris Cohen, in *A Preface to Logic*, freely admits: "if by logic is meant a clear, accurate, and orderly intellectual procedure, then the subject of logic, as presented in current textbooks, comes near being the most illogical in our chaotic curriculum."[29] Logic does *not* turn out to be an *invariant* field of elementary self-evident beliefs and set procedures by which all reasonable and educated men have arrived uniformly and with absolute certainty at agreed upon truths, rules, and evaluations of arguments. Nor has it been found that logic sustains relationship to all other fields of study (including epistemology and metaphysics) which is solely and uniquely a one-way foundational relationship to them; we have seen that *epistemological and metaphysical presuppositions* significantly influence positions taken in "formal logic" - in which case the discipline can hardly

be said to be utterly *neutral* and *objective*. The last ditch stand for the honorific conception of "science" which was introduced earlier, lifting high the banner of formal logic, must now raise a white flag. Even as with the other disciplines of scholarly study, logic is found wanting in thorough justification and lacking in unity. Given the honorific conception, *not even* formal logic can truly count as "scientific."[30]

Return To The Bible

When we finally return to Kaufmann's critique of theology and its interpretation of Scripture as utterly plastic or arbitrary, we can understand how Grant's conception of "scientific" study has unfortunately controlled his approach to hermeneutical subjectivity. In the first place, if "science" - the traditional prophylactic to scepticism and relativism - is taken as presuppositionless, neutral, and invariant, then Grant would naturally succumb to the thought implicit in criticisms like Kaufmann's, that diversity of approach and the influence of presuppositions are a *threat* to the "scientific" status of Biblical interpretation. Second, the "objectivity" of interpretation will have to be secured by (1) artificially dividing the overall hermeneutical enterprise into an earlier "scientific" phase and later personally subjective phase, and (b) gaining restraint upon the later "theological" phase of this enterprise by surrendering *sola Scriptura* - that is, breaking the hermeneutical circle by the introduction of autonomous reason and tradition.

The problem, of course, is with Grant's quite incredible conception of science. Neutral, agreed upon, presuppositionless objectivity in method and conclusions is simply not to be found in science or logic. To point this out is *not*, moreover, to discredit science and logic. Nor is it to capitulate to subjective relativism. There is a reality *independent* of man's mind, conceptions, and beliefs. That reality can be *known*; we can arrive at true beliefs about it which, from among the welter of conflicting claims, can be warranted by good and non-arbitrary evidence. The normative enterprise of epistemology, in its discussion of justification or rational decision-procedures for conflicting claims to knowledge, should not be "naturalized." Nor do we need to abandon the cognitive certainty of a secure starting point (despite psychological insecurities or personal penchants to disagree about it) in abdication to voluntarism, fideism, obscurantism, unwarranted conjecture, blind prejudice, relativism and scepticism. The question is not whether Biblical interpretation or any other disciplined study can hope to qualify according to some mythical conception or ideal of "science," but rather, what realistically *constitutes* acceptable science.

If - as we should - we view science as the prophylactic to scepticism, and if - as we should not - we continue to conceive of "science" as objective, neutral, and invariant, *then* our preceding discussion of science and logic will indeed make epistemological despair inevitable. Thus we can accept the conclusion, or we can question the premise of scientific neutrality. In doing the

latter, the presuppositional character of theology and hermeneutics (as well as variant approaches or conclusions) will not in itself pose a detriment to their scientific status. The critic would have to go beyond that point in order to have any real point at all.

Our goal should be to formulate a realistic and faithful evangelical view of science which (1) can acknowledge the crucial function of presuppositions in all theorizing (even Biblical interpretation), and yet (2) preserve non-arbitrariness by gearing justification procedures to the subject mater in question, while (3) providing the necessary preconditions for rational study in any area whatever. Science, even as general epistemology, is geared toward *justification* of claims, for knowledge is more than simply true belief: it is true belief held on good evidence. Accordingly, science is by its very nature *rule-governed*, thereby eliminating personal subjectivism and arbitrariness. Commitment to such regulated warrant of claims will function within a broader context of one's view of himself, the world, standards, etc., so that the elements or principles of the regulating warrant-procedures will comport with each other and be suitable to the subject matter. In this way a *community* of method is created for resolving disagreements, and to some degree a more general "way of life" (e.g., a way of thinking, living, interacting, studying, arguing, applying results) is recognized. If the basic outlook of a way of life or scientific community is that an extra-personal, definitive, set object of cognition is pursued by its participants, then with suitable caution, humility, and correction the conflicts which arise will always in principle be resolvable. What in descriptive practice appear to be equally coherent yet incompatible alternatives within a field of study or a school of thought cannot in reality be such; re-examination and further study are prescribed. In the foregoing general sense, evangelical Biblical interpretation - despite interschool and intra-school disagreement - is fundamentally a *science*. Ramm puts it this way:

> Hermeneutics is a *science* in that it can determine certain principles for discovering the meaning of a document, and in that these principles are not a mere list of rules but bear *organic* connection to each other.[31]

In light of the very subject matter for interpretive study - a written revelation from God which claims for itself clarity, sufficiency and ultimate authority in thought and behavior - the Reformers found their regulating hermeneutic within Scripture itself, which meant that its claims could not be contested, its parts could not be made contradictory, and its sense had to be the normal (rather than reconstructed) sense found in historico-grammatical context and according to literary genre in question. Contrary to Grant, hermeneutics does *not* become a science by suspending presuppositions *or* by acquiescing to some authority, commitments, or method lying outside Scripture. Pursuing *sola Scriptura* does not imply that one is being "unscientific."

What, then, can we say about conflicts between different scientific communities - between those which submit to Scripture as clearly interpreting itself and those which challenge that position? How can such a conflict be settled? Only by a general examination of their fundamental, determining presuppositions. And here, if *any* discipline is to have its scientific status preserved against arbitrariness, relativism, and scepticism, it will be forced to *return to the Bible's message* about God, the world, man, standards, etc. The justification of fundamental assumptions is not to be left an open question, and yet just because the assumptions in question are fundamental their warrant must be indirect - not *suspended* for examination according to even more fundamental beliefs (which is excluded in the nature of the case), but warranted in a way which *exemplifies* and *applies* them. This will be the "transcendental" method of arguing from the impossibility of the contrary, and it can conveniently focus on those very assumptions which we have already noted to be crucial to science and logic: e.g., perception, induction, organizing principles of experience, necessity, abstract entities, unity and diversity in reality and thinking. Personally and psychologically some people may not commit themselves to Biblical presuppositions, but these will be the same people who are at a loss to salvage science in the face of sceptical relativism. It remains to be seen how any unbelieving philosopher can give an account of science and logic without an *arbitrary* "leap of faith."

What we take to be the appropriate tools of interpretation, then, is determined by our conception of the Biblical message, and those tools in turn warrant, refine, and extend our conception of the message. This hermeneutical circle is presuppositional in method, and yet it is confidently scientific in character. Our confidence in the *perspicuity* of Scripture (based on its own self-testimony) and the *validity* of the hermeneutical position appropriate to the Scripture is transcendental in character. Without them, all areas of knowledge would have to be taken as uncertain, obscure and relative - meaning the decisive defeat of all science and logic. Moreover, the differences which arise in interpreting the Bible, whether they be minor differences *within* a theological circle or major differences *between* believing and unbelieving readers, are not contrary to the Bible's testimony to its own clarity. This is because the Biblical message does not assure us that Scripture will contain no difficulties for intense study, nor does it guarantee that interpreters will not be careless, lazy, sinful, or guilty of reading into the text - and thereby in need of more perfect submission to the rules (narrowly, the rules for proper *handling* of the text, or broadly, the rules for intellectually and practically *submitting* to the Biblical "way of life").

So then, is Biblical interpretation "scientific"? *No*, if one means that *sola Scriptura* must be abandoned so as to acquiese to an allegedly objective, invariant domain of autonomous reason. *No*, if one means (counter-factually) that any science will be characterized by freedom from presuppositional commitments and by pervasive agreement on methods and beliefs. Does Biblical interpretation then become arbitrary and relative? No, it is as scientific as any other discipline. Indeed it supplies the very *preconditions* for all the other sciences. Discarding the illusion that "science" is marked by settled, invariant, and presuppositionless objectivity, we

can not only recognize that Biblical interpretation is genuinely scientific, but we can further see that it is in fact the tool of the very "queen of the sciences."

[1] Walter Kaufman, *Critique of Religion and Philosophy* (New York: Harper and Row, 1958), p. 207.

[2] Ibid., pp. 180, 181, 182, 226-227, 369-370, 373, 377.

[3] Ibid., pp. 211, 212, 219.

[4] Ibid., p. 225.

[5] *The Merchant of Venice*, Act III, Scene 2.

[6] Robert M. Grant, *A Short History of the Interpretation of the Bible*, rev. ed. (New York: Macmilan Co., 1963), pp. 197, 201.

[7] Ibid., pp. 178, 163.

[8] Ibid., p. 196.

[9] R. C. Sproul, *Knowing Scripture* (Downers Grove, Illinois: InterVarsity Press, 1977), pp. 11, 37-40. Only later in a different setting is it countenanced that subjective involvement plays a role "not only for the purpose of personal application of the text but for understanding as well" (p. 66).

[10] Grant, *Short History of Interpretation*, p. 190.

[11] Ibid., pp. 191, 193.

[12] Ibid., pp. 196, 186, 201-202.

[13] Ibid., pp. 11, 12-15, 203-204.

[14] Ibid., pp. 190.

[15] Bernard L. Ramm, "Biblical Interpretation" and "The New Hermeneutic," *Hermeneutics* by Bernard L. Ramm and Others (Grand Rapids: Baker Book House, 1971), pp. 20-21, 136, 138.

[16] Simon Kistemaker, "Formation and Interpretation of the Gospels," *Interpreting God's Word Today*, ed. Simon Kistemaker (n.p.: Presbyterian and Reformed Publishing Co., 1970), p. 79.

[17] R. C. Sproul, "The Case for Inerrancy: A Methodological Analysis," *God's Inerrant Word*, ed. J. W. Montgomery (Minneapolis: Bethany Fellowship, 1974), pp. 248, 250: *Objections Answered* (Glendale, CA: G/L Regal Gooks, 1978), pp. 45, 22, 23, 24, 33; cf. *Knowing Scripture*, pp. 73-74. Quite a different picture of Galileo emerges in chapters 6-11 of Paul Feyerabend's *Against Method* (London: Verso, 1975).

[18] The infallible/incorrigible distinction may be pursued in William Alston's "Varieties of Privileged Access, "*American Philosophical Quarterly* 8 (July, 1971). I have criticized Wittgenstein's common-sense position on the quest for certainty in "Pragmatism, Prejudice, and Presuppositionalism," *Foundations of Christian Scholarship*, ed. Gary North (Vallecito, CA: Ross House Books, 1976).

[19] This altogether too brief survey of foundationalist and pragmatic models of science has drawn upon the convenient portrayals found in John Kekes, "Recent Trends and Future Prospects in Epistemology," *Metaphilosophy* 8 (April/July, 1977): 87-107, and Nicholas Wolterstorff, *Reason Within the Bounds of Religion* (Grand Rapids: Wm. B. Eerdmans, 1976), chapters 4-6.

[20] Gilbert Ryle, *Dilemmas* (Cambridge: University Press, 1954), pp. 71, 81, 126.

[21] Stephen Edelston Toulmin, *The Uses of Argument* (Cambridge: University Press, 1969).

[22] Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 2d ed., enl. (Chicago: University of Chicago Press, 1970).

[23] John Warwick Montgomery, *Where is History Going?* (Minneapolis: Bethany Fellowship, 1969), pp. 136-137, 168; *The Shape of the Past* (Ann Arbor: Edwards Brothers, 1962), pp. 143-144, 229.

[24] Gordon H. Clark, in *The Philosophy of Gordon H. Clark*, ed. Ronald H. Nash (Philadelphia: Presbyterian and Reformed Publishing Co., 1968), pp. 37, 67-68, 74, 76, 89, 96-97, 122, 126; "Special Divine Revelation as Rational," *Revelation and the Bible*, ed. Carl F. H. Henry (Grand Rapids: Baker Book House, 1959), p. 37; *A Christian View of Men and Things* (Grand Rapids: Wm. B. Eerdmans, 1952), p. 308; *Dewey* (Philadelphia: Presbyterian and Reformed, 1960), pp. 67-68.

[25] Edward John Carnell, *An Introduction of Christian Apologetics* (Grand Rapids: Wm. B. Eerdmans, 1948), pp. 104-106, 113-114; *The Case for Orthodox Theology* (Philadelphia: Westminster Press, 1959), p. 25.

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[27] Arlie J. Hoover, *Dear Agnos: A Defense of Christianity* (Grand Rapids: Baker Book House, 1976), pp. 41-43.

[28] Wolterstorff, *Reason Within Bounds*, p. 20.

[29] Morris Cohen, *A Preface to Logic* (New York: Meridian Books, 1957), pp. 15-16.

[30] Much of the preceding discussion has been drawn directly and heavily upon an excellent, forthcoming article by Dallas Willard, "The Continuing Crisis in the Foundations of Logic"; it has also profited from the discussion of the philosophy of mathematics in Vern Poythress, "A Biblical View of Mathematics," *Foundations of Christian Scholarship*, ed. Gary North (Vallecito, CA: Ross House Books, 1976). The "History of Logic" can be conveniently scanned in the same named article in *The Encyclopedia of Philosophy*, ed. Paul Edwards (New York: Macmillan Publishing Co., 1967) 4: 513-571.

[31] Bernard Ramm, *Protestant Biblical Interpretation*, 3d rev. (Grand Rapids: Baker Book House, 1970), p. 11.