Historiography and Natural History

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Abstract

Natural history is commonly considered a science by virtue of the application of the scientific method. Although distinctions exist between human history and natural history, natural history is not a science because the study of unique past events is history. Since natural history is a class of history, it presupposes and requires a "natural historiography", just as history presupposes and requires historiography. This natural historiography cannot simply appeal to the scientific method; indeed, a focus on method alone is inadequate. A complete and explicit historiography of natural history remains to be developed and applied. Historiography provides a template for a natural historiography, despite differences between human history and natural history. Deriving a natural historiography is best done within an integrated worldview which can define its scope, value, and methods. The worldview of Naturalism cannot do this because of irreconcilable differences between its axioms, methods, and conclusions that pertain to natural history. These problems are not present within Biblical Christianity which can alone define and justify a natural historiography. Christianity validates natural history but modifies its scope, value, and method from that currently accepted and applied.

Introduction

Natural History in the Origins Debate

Although the false dichotomy of religion vs. science is apparently still useful as a propaganda ploy, thinkers on both sides of the origins debate have begun to recognize the role that extrascientific considerations play in the debate. Some even correctly understand that the heart of the debate is between competing worldviews of Biblical Christianity and Naturalism (Johnson and Provine, 1994; Noebel, 1991). Unfortunately this line of thought is not carried to its logical extent, and natural history has been seemingly exempted from critical analysis. For example, Johnson (1997) ably attacks the process of organic evolution from a philosophical point of view, but his "baloney detector" never points at natural history, implying that natural history and Naturalism are disconnected. Scientific attacks on the possibility of evolution (e.g., Behe, 1996; Denton, 1986) have created an upsurge of intellectual support for a role for God in the origin of the universe. Lagging behind is an appreciation for the connected and parallel role of God in history and the subsequent hesitation of many to question natural history. Many scientists are willing to accept God as creator while rejecting God as sustainer and Lord of His creation. Indeed, the acceptance of a natural history embodied in the geologic column and modern cosmology appears to be a litmus test for separating "respectable" opponents of Darwinism from the "lunatic fringe" of creationism even within Christianity. Underlying this hesitation to critically evaluate natural history is the faulty premise of assigning the status of science to natural history, and consequent misplaced sense of objectivity for the interpretations of modern natural historians.

Importance of History

Some may wonder why the issue of the age of the earth and the facts of its history merit any concern. First, the recognition of such a thing as a unified and coherent worldview presupposes that history be included. Second, history has strong religious connotations.

> That the question of history has any importance at all is in itself a religious conclusion. The classical view was that reason transcends the facts of history, just as universals transcend particulars. Therefore, historical events – as, indeed, all change – were relatively unimportant. The cycles of history were not drawn to a goal but would keep on recurring endlessly. This notion devalued events and robbed them of significance. Eastern mystics also devalue history, regarding events as particularities in which they have no interest and preferring instead to contemplate the unity from which they believe the particularities de-

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> rive their meaning. That is why, as G. K. Chesterton said, it is fitting that the Buddha be pictured with his eyes closed; there is nothing important to see. (Schlossberg, 1983, pp. 12–13)

As will be shown, many of the crucial assumptions that both religious and secular thinkers in the western tradition make regarding history are derived from biblical theology. Third, many modern thinkers, whether of Hegelian, Marxist, or other secular persuasion place great value upon history *per se* and find ultimate meaning in some immanent historical process. This requires a strong response from those who insist on history's significance being derived from the transcendent God of the Bible.

> In the Christian conception, the unconditioned acts on the conditioned, the absolute on the contingent, the outside on the inside, creator on the created, God on history. The action beyond history makes history what it is but is absent from the accounts of history. That is why Niebuhr concluded that "history does not solve the enigma of history." (Schlossberg, 1983, p. 37)

Thus, downplaying the importance of natural history as some side issue is inimical to a real resolution of crucial differences between Christians and secular thinkers even apart from disagreements over origins. The studied and shallow agnosticism of those Christians who cede earth history by default to the modern geologic establishment is at odds with both sound theology and sound thinking.

Empirical vs. Presuppositional Approach

A perusal of sources arguing either side of the origins debate reveals that most present inductive, evidential arguments to support one view against the other. A similar strategy is applied to arguments regarding both Darwinian evolution and natural history. These attempts to evidentially modify particulars of the narrative of natural history, while commendable, cannot replace a more foundational evaluation of the type applied here, and probably will not result in the worldview shift currently required away from the naturalist status quo.

The analysis of historical geology by means of a formal analysis of worldviews has been performed by Reed (1998, 1996a, 1996b) and Reed and Froede (1997). In each of these articles, a formal critique of Naturalism was employed demonstrating a failure of coherence and consistency between axioms, methods, and conclusions. This approach provided an abbreviated truth test relative to seemingly endless inductive arguments regarding the meaning of particular phenomena. Although abbreviated, this method is a more effective attack on evolution because it renders its foundations in Naturalism untenable in a rational sense, and thus requires either the abandonment of rational methods (i.e., science) or the worldview itself. What then is the benefit of inductive science? Great in every respect—but impossible without the superstructure of theology and philosophy explicit in its formative stages.

In a similar fashion, this paper seeks to focus on facets of Naturalism found in natural history. It will demonstrate the superiority of the Christian worldview to Naturalism in this area. The remainder of the paper will proceed to do so by the following steps:

- present a general overview of history;
- uncover distinctions between natural history, history, and science; and show the necessity of a natural historiography distinct from the scientific method;
- define links between natural history and Naturalism;
- show that natural history fails logical tests because of its connection to Naturalism; while
- showing that the Biblical Christian worldview supplies the philosophical and theological foundations for history, both traditional (human) and natural, lacking in Naturalism;
- outline parameters of a natural historiography; and
- explore the relevance of these conclusions to the origins debate.

An Overview of History

Definitions of History

History is commonly given two meanings. The first is all of the events of the past, and the second is the fraction of the first that is preserved in recorded accounts. The difference between the two definitions is the concern of historiography. Historiography is defined "as the principles or methodology of historical study" (Websters II New Riverside University Dictionary, 1988). Although most people have an intuitive understanding of what history is, historians have a difficult time agreeing on a singular definition of history. A cross-section of historians and historiographers reveals a surprising variety in definition. Four of these include:

> …to find out what happened in the past and to render it intelligible. (Hexter, 1962, cited in Clark, 1994, p. 19)
>
> …history may be regarded as a record of all that has occurred within the realm of human consciousness. (Barnes, 1937, cited in Clark, 1994, p. 19)
>
> …the record of facts which one age finds remarkable in another. (Burckhardt, 1943, cited in Clark, 1994, p. 20)
>
> It is essentially the study of transition, and to the historian the only absolute is change. (Butterfield, 1959, cited in Clark, 1994, pp. 20–21)

Clark (1994) concludes the attempts at definition with an extended definition by R. G. Collingwood (1956), one

of the most prominent historiographers of the twentieth century. In place of a single definition, he offers four points integral to a definition of history. He states that

- history is an inquiry; it involves asking questions about what we do not know as opposed to the recording of events that we already know,
- It is a record of human actions as opposed to those of the gods,
- It is based on the interpretation of evidence, and
- Its purpose is to teach us about man.

History is then similar to many other subjects. Its nature appears obvious on the surface, but study and reflection reveal significant hidden complexity. Is it just the complexity of the subject that leads to such significant disagreement of even a definition by historians? Clark does not think so, and offers a more insightful reason for the differences:

> *History requires philosophy*. Not only is the need for philosophy seen in the earlier difficulties and puzzles, but it is also seen, where some people do not expect it, in the very definition of history… The definitions of history, listed above, all reflect the philosophy of their authors. Those authors who have reflected but little on philosophical problems give looser definitions. Those who have puzzled through many difficulties become more pedantic, more careful, more accurate. Implicit in their formulations are their views of man, of society, of God, and therefore of knowledge… whatever his definition and extended views of history are, there must always be an underlying and controlling philosophy. It can be ignored, but it cannot be avoided. (Clark, 1994, pp. 21–22, *Italics added*)

I have previously shown a strong dependence of origins studies on philosophy and theology based upon their role undergirding science (Reed, 1996a; 1996b; Reed, 1998). Although natural history is not science, demonstrating a similar dependence of history on philosophy and theology offers a similar basis for a formal critique of natural history in its present close relationship to Naturalism and in its potential relationship to biblical Christianity. If the axioms, methods, and conclusions of history must be reconciled with Christianity rather than Naturalism, then natural history must also be reconciled with biblical Christianity or abandoned. Marxism shares the same weaknesses as Naturalism in this regard (see Table I), and eastern worldviews do not provide the basis for science or history as they are understood by western culture.

Origins of Modern History

The historical development of history has been the topic of numerous books, and has been perhaps best summarized in R. G. Collingwood's, *The Idea of History*. For the purposes of this paper, suffice it to say that a sense and view of history that are dissimilar to those of almost all other cultures is a feature of our modern culture. Glover (1984), among many others, argues convincingly that the sense of existing in history or "historical self-awareness" is directly related to a biblical understanding of man. The role of biblical theology on the modern understanding of history can be appreciated by summarizing the presuppositions of modern history dependent on and related to biblical theology (Table I). Some of these have been downplayed by post-Christian practitioners, but many remain, even though the biblical connection has been ignored or obscured.

Glover summarizes the crucial role these philosophical assumptions have played in the development of a modern concept of history:

> An analysis of the Western sense of history reveals three aspects of it that are especially pertinent to this study: a linear, unidirectional sense of time; voluntarism, an emphasis on will and purpose as creative of novelty; and a faith in God's sovereign control over both nature and history. The last, of course, does not carry over into secular or atheistic experience of historical existence; but the first two are shared by Christian and secular humanist. (Glover , 1984, p. 192).

Schlossberg notes the same dependence:

> The biblical view is that history had a beginning and will have an end, and that both the beginning and the end are in God's hands. Therefore, what comes between them is invested with meaning and purpose; the creator is not the prime mover of ancient philosophy, and the terminator is not the bleak exhaustion of resources or the running down of the sun. Will and personality dominate everything and make of history a moral arena. (Schlossberg, 1983, pp. 27–28).

Theories of History

The modern rejection of the Christian worldview has been manifested in various theories of history popular since the Enlightenment. Three theories relevant to modern natural history include Physical Determinism, Marxism, and Scientific Naturalism. *Modern practitioners of natural history explicitly or unknowingly borrow to some extent from each of these theories*. Clark (1994) evaluates each of them by critiquing their philosophical roots, demonstrating the dependence of history on philosophy. Although other theories of history exist, these three have dominated the twentieth century. Their importance to natural history is seen in the often-implicit acceptance of their underlying philosophical positions in aspects of natural history. The weakness in all post-Christian theories of history is their need for assumptions based on biblical theology. These assump-

Table I. The theological bases for presuppositions of modern history and natural history are shown to be derivative of biblical Christianity. Although some differences are readily apparent, the most important presuppositions of both history and natural history depend on doctrines of Christianity. These assumptions cannot be logically derived or defended within the naturalist worldview. Examples from Glover (1984), Schlossberg (1983), and Clark (1994).

Assumption About History	Biblical/Christian Basis	Shared by Secularists	Applied to Natural History
Nature distinct from history; escape from determinism	God transcends nature and acts in time	Yes = generally No = Hegel, Marx	No; inconsistent
Ultimate meaning of history is outside history	Kingdom of God vs. earthly kingdoms	No	No
Change explained by ultimate unchanging reference point	God is immutable	No, inconsistent	Yes (evolution as a principle)
All events of history have meaning	God is omniscient, omnipresent, omnipotent	Yes, but subjectively assigned by historian	Subjectively assigned by historian
World had a beginning	Genesis 1:1	Yes, "big bang"	Yes, defer to cosmology
Time is linear	Time has beginning and end with purpose in between	Yes	Yes, evolution
Time is irreversible, and events are non-recurring	God's purpose drives history to goal	Yes	Yes, Dollo's law
Man transcends nature, expresses freedom and creativity in historical existence	Man created in God's image; Dominion given to man	Yes, inconsistent	Yes, inconsistent
Mission oriented aspect of man; individual and cultural	God showed purpose for his people in OT and NT	Yes, e.g. environmental movement; inconsistent	Yes, but imposed by nature
Flow of history has meaning	Purpose worked out in history; i.e., Old Testament	Y = Hegel, Marx N = existentialists, nihilists	Yes, meaning found in evolution
History moving to culminating point	Final judgment in Revelation	Yes, secular visions; both optimistic and pessimistic	Yes, nature "dies"
Idea of progress; progressive history = progressive understanding	Progressive revelation; God's plan and purpose	Yes, Hegel, Marx and dialectic	Yes, Evolution
Values defined outside of history	God exists outside of history; imposes value	No	No

tions and their application by modern historians are seen in Table I. The extent to which any of them borrows Christian notions of reality for support is an indication of the degree of inconsistency inherent in each one. Table I presents a historical case for the dependence of non-Christian worldviews on Christian axioms in the sense of what actually has transpired in the development of these worldviews. A critical evaluation of Naturalism (e.g., Noebel, 1991; Glover, 1984; Schlossberg, 1983) demonstrates that the historical inconsistencies are mirrored by logical inconsis-

tencies. These can be seen by performing a thought experiment to derive and justify the Christian axioms within the metaphysical framework of competing worldviews. It is not possible.

Natural history has borrowed elements of Physical Determinism. Clark (1994) traces Physical Determinism to various thinkers, but considers its explication by Immanuel Kant as the most basic to date. Physical Determinism is a non-historical explanation of history (Clark, 1994) that asserts an explanation of reality (including history) is possible by reference to matter and its properties, particularly position and motion. Since everything is a function of physical position and composition, then mathematical descriptions and predictions of reality are theoretically possible. But history is largely an account of moral actions and implies purpose; therefore a moral and teleological framework for explanation must be derived. Since it is difficult to describe morality or purpose mechanistically in material reality (Kant's phenomenal world), Kant placed purpose in another sphere of reality, which he called the noumenal world. However, there was no connection between the noumenal and the phenomenal worlds. In essence, Kant asserted that although we could not discover purpose or ethics in nature, we should live and investigate as though they existed. Clark (1994) asserts that Kant could not consistently explain purpose or morality, and thus could not explain history.

> This then may be taken as the climax of the mechanistic theory of history. Mechanism and teleology can be harmonized only by declaring the latter to be imaginary. Morality and freedom are banished to an unknowable intelligible world which has no control over visible human action. And whatever could possibly be said about the purpose or inclination of a single person, the course of history like the course of nature can have no goal. (Clark, 1994, p. 49).

Natural history has also incorporated elements of Marxism into punctuationist concepts of evolution. Clark (1994) points out that Marxism is much more than a theory of history – it is a comprehensive worldview that embraces economic determinism. Noebel (1991) presents an exhaustive comparison of Marxism to Biblical Christianity. Marx took the structure of Hegelian idealism, exchanged the spiritual for the material, and derived dialectical materialism. The struggle between inherent contradictions in nature (and man) leads to the revolutionary resolution in the dialectical process, which in turn leads to a new synthesis. As materialists, Marxists are explicit about the link between science, history and all other knowledge. Like Physical Determinism, Marxism falters in the definition of ethical and moral criteria for judging actions (and history). The contradictions between assertions of value-free knowledge and absolute statements of approval (of communism) and condemnation (of capitalism) are difficult to reconcile. Not only do they fail in their epistemology, but also in their ability to explain history – supposedly a strength.

> Marxists prefer to dilate on social phenomena as large as the replacement of one civilization by another. In this they obtain a measure of abstract security. But when it comes to the details of history, their vaunted scientific methods leave them silent…Let us then ask the Marxists, since they claim that history is a science, to explain why Napoleon chose to invade Russia rather than to consolidate his hold on Western Europe. Or, let them explain why imperial capitalism in the United States undermined Chiang Kai-shek and invited communists to take over China. (Clark, 1994, p. 95).

Scientific Naturalism is defined by Clark (1994) in terms of its positivistic method. It asserts an unrealistic ideal of explanation by the empirical discovery of laws of history similar to those of physical science. Although pure forms of philosophical positivism have been largely abandoned, this view of history demonstrates that mutated forms still thrive outside philosophical environments. Clark (1994) traces the roots of this theory of history to Henry Thomas Buckle (1821–1862) who thought that laws of history could be defined statistically. Scientific naturalism stresses the key elements of necessary causation and prediction, carryovers of a scientific method. The positivistic method has been forcefully advocated this century by such eminent historians as Oswald Spengler (1880–1936) and Arnold Toynbee (1889–1975) who both proposed laws of history based on cycles of civilization. Clark (1994) critiques this view by pointing out that the conceptual framework of both historians (cyclical civilization) cannot be discerned empirically in history. Disagreements between the two historians suggest that the "universal law" of cyclical civilization cannot be universally applied. Finally, positivistic interpretations cannot provide prediction on any significant level of detail.

Scientific naturalism has been congenial to natural history. A supposed ability to derive laws of history helps suppress questions about the derivation of such laws in natural history. The emphasis (even in our existential 20th century) on "laws of evolution", "laws of facies", and of course the 'first commandment' of natural history—"the present is the key to the past"—underscores the relationships between the two. Scientific naturalism as a theory of history is important for natural history because the most prevalent law of history in modern times has been the idea of progress, intimately connected to assertions of biologic evolution. The unmasking of evolution as a part of a worldview is apparent in this context— the idea of progress as a universal and inevitable law of history is grounded in a belief in biological evolution, supposedly derived empirically. Clark's (1994) critique of a positivistic method in history not being able to generate uni-

versal laws carries significant import for natural history, which also asserts universal laws of history within a positivist scheme. If natural history is history, then Clark's (1994) critique applies to it, too. Pertaining to the idea of progress (or evolution in any sense), Clark (1994) points out that progress implies a goal that cannot be known or even demonstrated within naturalism, rendering progress a semantic trick rather than a true explanation.

Natural History, History, and Science

What is natural history? How did the discipline develop? Does it differ from history? If so, how? Does it differ from science? If so, how? These are the basic questions that must be answered if a satisfactory natural historiography is to be constructed.

What is Natural History?

Natural history is defined as, "The study of the nature and history of all animal, vegetable, and rock and mineral forms". (Bates and Jackson, 1987). As currently practiced, natural history displays its dependence on assumptions of naturalism. Since it is an account of the history of nature, and since nature is thought to be very old, it focuses on the development of the geological and biological aspects of the earth prior to the advent of man. Because there could be no written record of history prior to man (since revelation is excluded a priori), then the historical record consists of the physical features themselves, interpreted by principles of historical geology and evolutionary biology. Because the evidence is physical rather than written, science must provide the method of investigation.

All of these assumptions lie outside of history, and the assumption of a scientific method is a particular problem for natural history. This assumption is fallacious because the scope and goal of the project, instead of just the nature of the evidence should also dictate the method. The peculiar combination of a historical project and physical evidence is an argument for a mixed question approach, and defaulting to science is improper. As with science, the denial of a metaphysical base inherent in modern Naturalism has led to an epistemological error of significant proportions.

Prior to the nineteenth century, the Bible was the defining account of the history of the earth, and history was interpreted in the context of God's relationship with man. Although the medieval hermeneutic gave proper emphasis to the underlying purpose of history (bolstered by Augustine's *City of God*), the Reformation hermeneutic of literal interpretation restored a proper emphasis to the importance of and reliability of the factuality of history. This theological impetus combined with the Renaissance understanding of man in his relationship to God. Glover (1984) argues convincingly that a renewed appreciation at this time of man existing in God's image and in a special relationship with God provided the foundation for the western sense of historical self-awareness taken for granted today. In these complementary developments of the Renaissance and Reformation, Biblical Christianity provided (1) the meaning of history, (2) a methodological emphasis on the factuality of history, and (3) a record of many of the facts of history.

During the Enlightenment, the overtly Christian approach was distorted. Although empirical humanists maintained a methodological emphasis on the factuality of history, they rejected the Christian meaning of history, and rejected the veracity of the Bible as a factual record of history. Lyellian uniformitarianism was thought to provide the context for an empirical natural history apart from the records in the Bible, and Darwinian evolution provided the unifying principle in historical interpretation previously ceded to man's relationship with God. Man's importance was seen in his new relationship to nature as the pinnacle of evolution, rather than a transcendent image-bearer in fellowship with God. History was divorced from natural history, which assumed importance apart from God and man.

Natural history as it is studied and taught today is the story of the natural origin and evolution of the earth and all of its lifeforms. It pretends no relationship to man or God. Nature apart from God must have evolved (in a rational manner if rational approaches to reality were to be applied) and so history became the study of evolution which occurred in the past. Since no historian was present to record the past, only physical clues are available. Since the goal of the historical project became the discovery of the "story" of evolution, the "text" became the historical record of rocks and their constituent fossils. The rock record was assumed to require scientific knowledge to decipher, and interpretation was assumed to be within the scientific method. The positivistic euphoria of the nineteenth century precluded serious questioning of this error.

> This attempt to make history scientific originated in the positivism of Auguste Comte. The term positivism was used to contrast the reliable methods of natural science with the ethereal speculations of metaphysics; and while later postvistic historians may not accept other parts of Comte's philosophy, the term itself is not too inaccurate. The aim is to discover laws by empirical observation. (Clark, 1994, pp. 99–100).

Similarities between Natural History and History

Mortimer Adler (1965) derived four basic types of natural knowledge by two dichotomies. The first was a dichotomy of method with investigative and non-investigative branches of natural knowledge. Both history and science

were classified as investigative branches using special experience, as opposed to philosophy, which employs the common experience of all mankind regardless of time or place. The second dichotomy was between analytic and synthetic knowledge (borrowing the terms from Hume and Kant). History and science were again classified together as synthetic (i.e., empirical) forms of knowledge. However, history and science were distinguished by two important criteria. The first is that history is the empirical investigation of singular events in time while science is the empirical investigation of universal principles not bound by time. The second is that history investigates features of the past, but science utilizes special experience to derive universal conclusions. Adler agreed with Collingwood (1956) that history is an investigation and that it is understood empirically with an emphasis on the facts of history rather than some type of Platonic, Hegelian, or Marxist speculation. However, Adler (1965) clearly distinguished the scope and method of history from those of science. Recently, he expanded on this concept with an apt illustration of natural history:

> Similarly, when scientists (such as geologists, paleontologists, and evolutionists) sometimes attempt to establish the spatial and temporal determinants of particular past events or to describe a particular sequence of such events, they cease to be engaged in scientific inquiry and become engaged in historical research, sometimes called natural history. Though both history and science are investigative modes of inquiry that submit their conclusions to the test of experience (i.e., the data obtained by investigation), history by its method can answer questions that science cannot answer; and science by its method can answer questions that history cannot answer. (Adler, 1993, p. 15).

Adler's (1965) insight that history and science are both synthetic investigations of special experience perhaps explains the ease with which natural history is classified as a branch of science and assumed to possess a scientific method. However, history and natural history share more important connections that render natural history a subset of history and not a subset of physical science or its own unique subject. The first is investigation of particular events and the second is the investigation of the past.

An argument might be made that natural history has uncovered various "laws" of history through a process of scientific discovery, and has thus validated the assertion that it is a scientific enterprise. However, closer examination of these so-called laws shows that they are speculative interpretations of limited data sets and not testable in the same sense as empirically derived concepts of science. Dollo's law of the irreversibility of evolution is a good example of this type of claim. However, Dollo's law cannot be a "scientific" law of history for several reasons. First, it cannot be the result of empirical discovery since insufficient time has elapsed during the scientific enterprise to observe sufficient evolution to draw a conclusion of irreversibility. Second, it is suspicious that a non-empirical philosophical assumption of irreversible, linear time existed prior to the "scientific" formulation of Dollo's law. Third, Clark (1994) argued against any derivation of laws of history by an empirical process. Finally he observed that knowledge of direction implies knowledge of a goal that cannot possibly be discerned or even demonstrated to exist at all. These objections conclusively show that the so-called laws of natural history are unproven speculative constructs unsupported in the same manner as those of physical science. Why then do natural historians persist in attempting to extract these "laws"? It is possible that the philosophical necessity for continuity *within* nature forces naturalists to extract predictable "processes" from history, rather than dealing with unique events.

What about the "first commandment" of natural history—uniformitarianism? It certainly attempts to blur the unique, non-repeatable nature of past events into regular processes conducive to scientific description. But is it an empirically derived law of history, or a presupposition employed by desperate necessity? Arguments for the latter are found in Reed (1998). Several lines of evidence strongly suggest that uniformitarianism is an interpretive scheme not derived from data, but from philosophical necessity. The assertion that the past can be characterized by universal generalizations independent of time is merely an assertion, it has not been and can never be demonstrated. Thus, it is a philosophical or theological presupposition. Although it might be justified by tests for coherence and consistency, it fails those tests within the context of Naturalism (Reed, 1998). Finally, uniformity is more consistent with the Christian worldview than with Naturalism.

Natural history and history are also linked in their methods by the sharing of methodological limitations. Clark (1994) notes that many of the key concerns of historiography were mentioned by Descartes (1637) in his *Discourse on the method of rightly conducting one's reason and seeking the truth in the sciences*.

> But I believed that I had already given sufficient time to Languages, and likewise to the readings of the writings of the ancients, to their Histories and Fables. For to hold converse with those of other ages and in travel, are almost the same thing. It is useful to know something of the manners of different nations, that we may be enabled to form a more correct judgment regarding our own, and be prevented from thinking that everything contrary to our customs is ridiculous and irrational – a conclusion usually come to by those whose experience has been limited to their own country. On the other hand, when too much time is occupied in traveling, we become strangers to our native country; and the *over-curious*

> *in the customs of the past are generally ignorant of those of the present*. Besides, *fictitious narratives lead us to imagine the possibility of many events that are impossible*; and even the most faithful histories, if they *do not wholly misrepresent matters*, or *exaggerate their importance* to render the account of them more worthy of perusal, *omit*, at least, almost always the meanest and least striking of the attendant circumstances; *hence it happens that the remainder does not represent the truth*, and that such as regulate their conduct by examples drawn from this source, are apt to fall into the extravagances of the knights-errant of Romance, and to entertain projects that exceed their powers. (Descartes, 1637, cited in Clark, 1994 pp. 3–4, emphasis added).

Descartes, in this short paragraph, summarized the most basic uncertainties of the discipline of history. Resolution of these uncertainties is the task of historiography. How do these relate to the practice of natural history?

The first challenge shared by historian and natural historian is maintaining a balanced assessment of the past through his knowledge of the present. This tension in historical interpretation of geological phenomena has not been resolved by the axiomatic application of uniformitarianism. For example, disagreements over the degree to which modern environments can act as interpretive templates of the past have resulted in the gradual modification of the uniformitarian axiom from the rigid formulation of Lyell to the almost completely elastic one of the present. The puzzling existence of rock types and inferred existence of environments not described in the present has been a thorn in interpretive schemes for almost two centuries. The real problem is in defining an appropriate standard against which interpretation can occur. Natural history clearly shares this tension between past and present by striving for a timeless interpretation of time-bound phenomena.

The second challenge to history is that of dealing with sources of information that become known to be false. The problem is twofold. First, the factual inaccuracies must be corrected wherever applied, and second, any aspect of interpretation based on the factual inaccuracy must be expunged or corrected. Because there are levels of interpretation within natural history, false interpretations of accurate data that become the basis for further false interpretations must also be addressed. The problem lies not only in the generation of blatantly incorrect data, but in the increasing resolution provided by advances in technology that invalidates old interpretations by providing new data. Woodmorappe (1999) illustrates the difficulties both of these challenges pose in the area of radiometric dating. He shows an inverse relationship between the sophistication of and experience with a given radiometric method and its reliability. Increasing experience with all methods has revealed inaccuracies in the initial claims made for each one.

The third problem is the role of interpretation in any historical narrative, assuming that all of the facts are accurate and presented in context. Collingwood (1956) insists that a criterion for doing history is the interpretation of data. What is the basis of that interpretation? Does it hopelessly distort the most accurate presentation of fact? Once again, natural history shares this challenge with history. Multiple interpretations of datasets are frequently presented in geological literature. Many times the disagreeing parties agree on the data presented but differ severely on their meaning. An aspect of this problem not mentioned by Descartes is the bias introduced by competing worldviews. Differences of interpretation between Neo- Darwinians and punctuationists are a good illustration of this aspect of the interpretive problem.

The fourth problem is one of the most persistent of historiographic challenges. How does the faithful historian select the often-miniscule subset of information to be presented in the limited number of pages he can write? What is the basis for inclusion and omission of that information? What appears as a casual detail today may become a crucial keystone of information tomorrow? Natural history shares this methodological challenge. Arguments in controversial topics such as human evolution often hinge on the assignment of relative importance or unimportance to key data by advocates of one side or the other. This issue is more severe for natural history than for human history for two reasons. First, the record being physical and not written is more ambiguous than a human account. Second, natural historians readily admit that the geologic record is composed mainly of gaps. Thus, the decision of the natural historian regarding the data that he will include in his account is even less a matter of his own informed (but still subjective) choice than might be true of a historian.

In summary, natural history is best classified as a subset of history because it shares a crucial distinctive with history: the investigation of singular past events. It is thus distinct from science, which investigates general, repeatable principles, usually through controlled experiment or observation—the "special experience" of Adler (1965). The speculative extrapolation of "laws of natural history" does not require the repositioning of natural history into the area of natural science. The close relationship of natural history to history is also demonstrated by their sharing the historiographic challenges summarized by Descartes. However, natural history is not identical to history. What are the aspects of natural history that distinguish it from human history?

Differences between Natural History and History

Collingwood (1956, pp. 210–217) tries to makes a case that history and natural history are distinct by virtue of history's purpose including an "inner" study of the thoughts of the

past behind the events as opposed to an "outer" study of the facts of the events themselves. He starts with the right idea:

> We must ask what is the general nature of the problems which this method is designed to solve. When we have done so, it will appear that the special problem of the historian is one which does not arise in the case of natural science. (Collingwood, 1956, p. 213).

However, Collingwood fails to carry this project through to its logical conclusion because he accepts the false premise that natural history as performed by geologists and biologists is science. He forces himself into the corner of having to define history after already having conceded its most basic properties to science. Missing this crucial point, he is left with history being distinct only by virtue of the historian being able to rethink the thoughts of historical figures—a questionable enterprise with numerous epistemological problems as outlined by Clark (1994). Had he arrived at a similar classification scheme to that of Adler (1965), he could have saved more of history. And if he had understood the role played by integrated worldviews, he would better have understood the nature of evolution and the danger it presented in nature swallowing history.

If Collingwood erred in lumping natural history and science, how can we avoid a similar mistake of a false dilemma between science and history? The answer is to recognize with Adler (1965) the possibility of mixed questions; indeed to recognize that such projects are common (Klevberg, 1999). We can concede that although natural history is, in its essence, history, it differs from human history in several important ways, and thus can be addressed as a distinct subset of history proper, apart from human history. What then are the differences between history and natural history?

The most obvious one is the subject of study. As Collingwood (1956) states, history is the study of human events in the past. Natural history examines the events of the past as they are resolved in nature. Instead of manuscripts, the natural historian relies on forensic evidence of rocks and fossils. The rejection of the possibility of textural evidence (i.e., the Bible) by natural historians is merely a result of assumptions within the their worldview, and cannot be justified scientifically. Some Christians have been intimidated into a similar, but less complete, form of this error when they modify the biblical evidence to fit a naturalist interpretation of the physical evidence. Thus the Flood is local, because there is no evidence of it in the geologic column, etc. Of course, even the distinction between the relative temporal applicability of textural and physical evidence relies on a philosophical assumption that man is distinct from nature. Whether this separation between man and nature is because of man's absence during most of history, or results from a metaphysical conclusion depends on the acceptance or rejection of the Christian or naturalist worldviews. Needless to say, Christians have no excuse for accepting the priority of naturalist interpretations of limited physical evidence over a record that presents itself as God's account.

The second obvious difference is derivative and touches the method of natural history. Because the subject is nature, there is considered to be no exhaustive written record of events in the same manner as are available for historians. Whether this deficiency is total or partial depends on the acceptance or rejection of the biblical Christian or naturalist worldviews.

Thus, it is clear that while natural history as it is currently understood displays features distinct from human history in the object of the study (and somewhat in the resulting method), it is more properly a subset of history than of science, since its defining features are those of history and not natural science. The false dilemma of Collingwood (1956) is resolved by the classification of Adler (1965) and by his advocacy of the possibility of mixed questions. The inability to properly classify natural history during its infancy probably resulted from a distorted view of science during a time when positivism overtly attempted to remove the boundaries between natural science and other disciplines. It is understandable that natural history was distorted by science, but that distortion now needs to be corrected to allow future progress in the discipline.

Natural History within Worldviews

Natural history plays an important role within the dominant worldviews of the twentieth century for two reasons; the importance each worldview itself places on history, and the internal intellectual momentum of natural history over the past two centuries. As previously discussed, history assumes a religious significance in its meaning in any worldview. The influence of Christianity in developing the historical consciousness of western man is evident even in those worldviews antithetical to Christianity for reasons summarized in Table I. Additionally, natural history itself generates a certain amount of inherent intellectual interest as evidenced by man's fascination with dinosaurs, fossils, and strata. Added to the intellectual interest is the commercial interest related to fossil fuel and economic mineral exploration and development.

Natural history as understood at present includes much more than a view of history. Much of Naturalism is inextricably intertwined with natural history as it is currently understood. Therefore, the worldview selected prior to any consideration of natural history *per se* will impact the scope and method of natural history. This section will describe how natural history fits both the Christian and naturalist worldviews and evaluate which is able to consistently

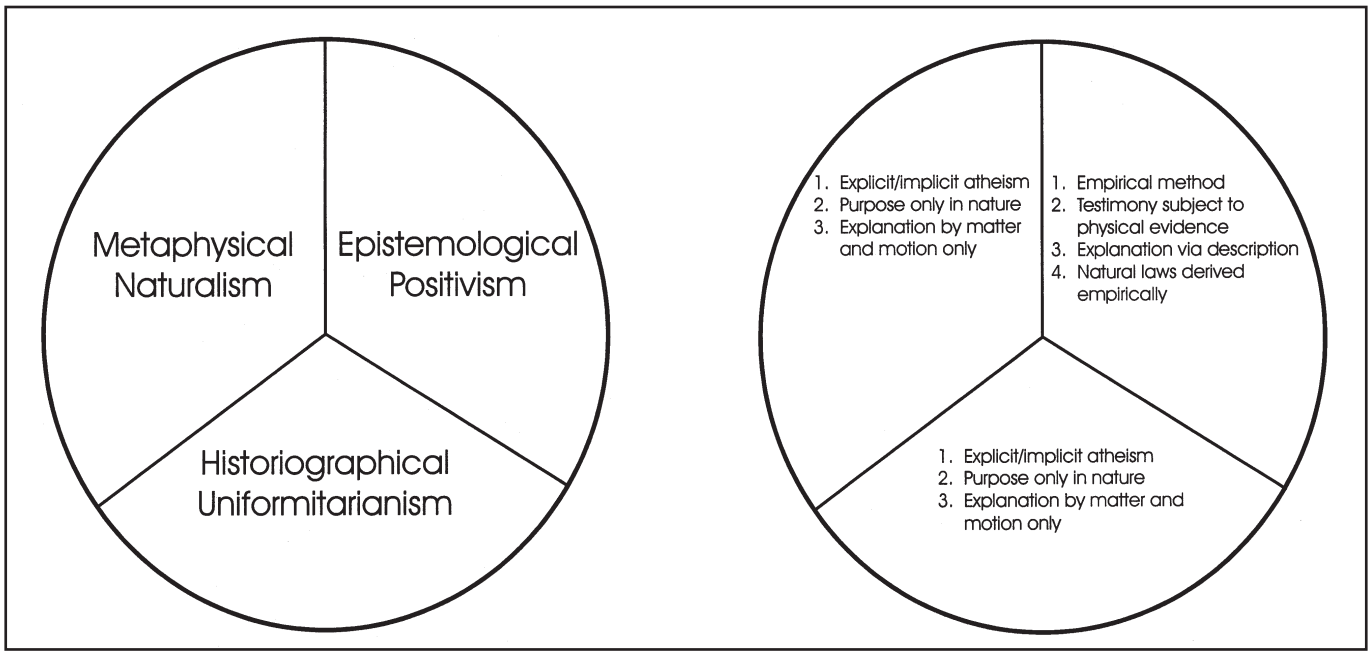

Figure 1. The triad of naturalism shows the metaphysical, epistemological, and historiographic aspects of the worldview. Although other facets could be explored, these are the crucial three that relate to the development of natural history and natural historiography.

support the presuppositions required to perform natural history. A natural historiography can then be approached that will be consistent with other elements of the selected worldview.

Natural History within the Naturalist Worldview

Knowledge is systematized into worldviews. Thus, no branch of knowing including natural history is independent from a worldview. Unfortunately, not everyone recognizes his own structure of thought in these terms, and many assert discrete realms of knowledge independent from each other. The rise of philosophical relativism and the popularity of all forms of twentieth-century existentialism aid this illusion. The resulting dichotomy within Christian thinking that combines the condemnation of evolution with the acceptance of natural history demands a minimal demonstration of the connections between natural history and Naturalism. This demonstration can be accomplished by describing three important aspects of Naturalism and then by showing the inseparable links between natural history and each of these aspects.

Having started prior to the twentieth century, modern naturalism presents itself, at least on the surface, as an integrated worldview with logical links between its different facets. To be understood, Naturalism must be examined from this perspective, rather than the piecemeal approach favored this century. Logical links can therefore be uncovered between metaphysical, epistemological, and historiographic assertions of the naturalist worldview. Figure 1 shows this triad. There is little doubt that metaphysical naturalism, or materialism, the denial of the non-physical, is the heart of Naturalism. Most people understand the entire worldview of Naturalism in this context. The part often ignored is the logical linkage between metaphysical aspects of Naturalism and other facets of the integrated worldview.

The theory of knowledge applied in naturalism is a logical outgrowth of that metaphysical position. If there is no reality beyond matter/energy existing in space/time, then knowledge about God, the soul, purpose, ethics, etc. is nonsense. Positivism developed from a skeptical materialism, and flourished during the nineteenth and early twentieth centuries. Although positivism has altered its appearance many times since Auguste Comte, the essential assertion that truth is found only in empirical observation of phenomena, remains.

> I know that there are enough varieties of positivism to permit the professors to retain their individuality, but I insist that behind the multiplicity of technical jargons there is a single doctrine. The essential point of that doctrine is simply the affirmation of science, and the denial of philosophy and religion. (Adler, 1992, pp.31–32).

Thus, since all of reality is sensible, then knowledge must be restricted to the investigation of the sensible phenomena.

The historiographic connection made in Reed (1998) is discovered by the logical conclusion that positivism is not congenial to historical research, despite the many attempts

to develop a positivist historical method. If knowledge is restricted to empirical science, then knowledge of history must be very limited because the investigation of one-time, non- repeatable events frustrates the scientific method. In brief, the problem is that of philosophic continuity. A level of certainty of empirical knowledge in the present does not guarantee the same certainty in the past without the non-empirical assumption of uniformity. The examination of the past relies on the reasonableness of extrapolation of present empirical knowledge into the past. But metaphysical naturalism removes the possibility of an infinite, eternal, and unchanging God as a basis for physical predictability through space and time. That being so, a rigid uniformitarianism is the only possible way that "scientific" knowledge (i.e., positivism) can be extrapolated into the past. This logical connection is reinforced by an examination of the philosophical purity of Hutton's and Lyell's concepts of uniformitarianism (Figure 2) and its later degradation. Only a decline of philosophical thinking by scientists this century can explain the blind accommodation of a radically different concept of uniformitarianism that offers no stability in the past without the consequent failure of the whole enterprise of the positivist natural history.

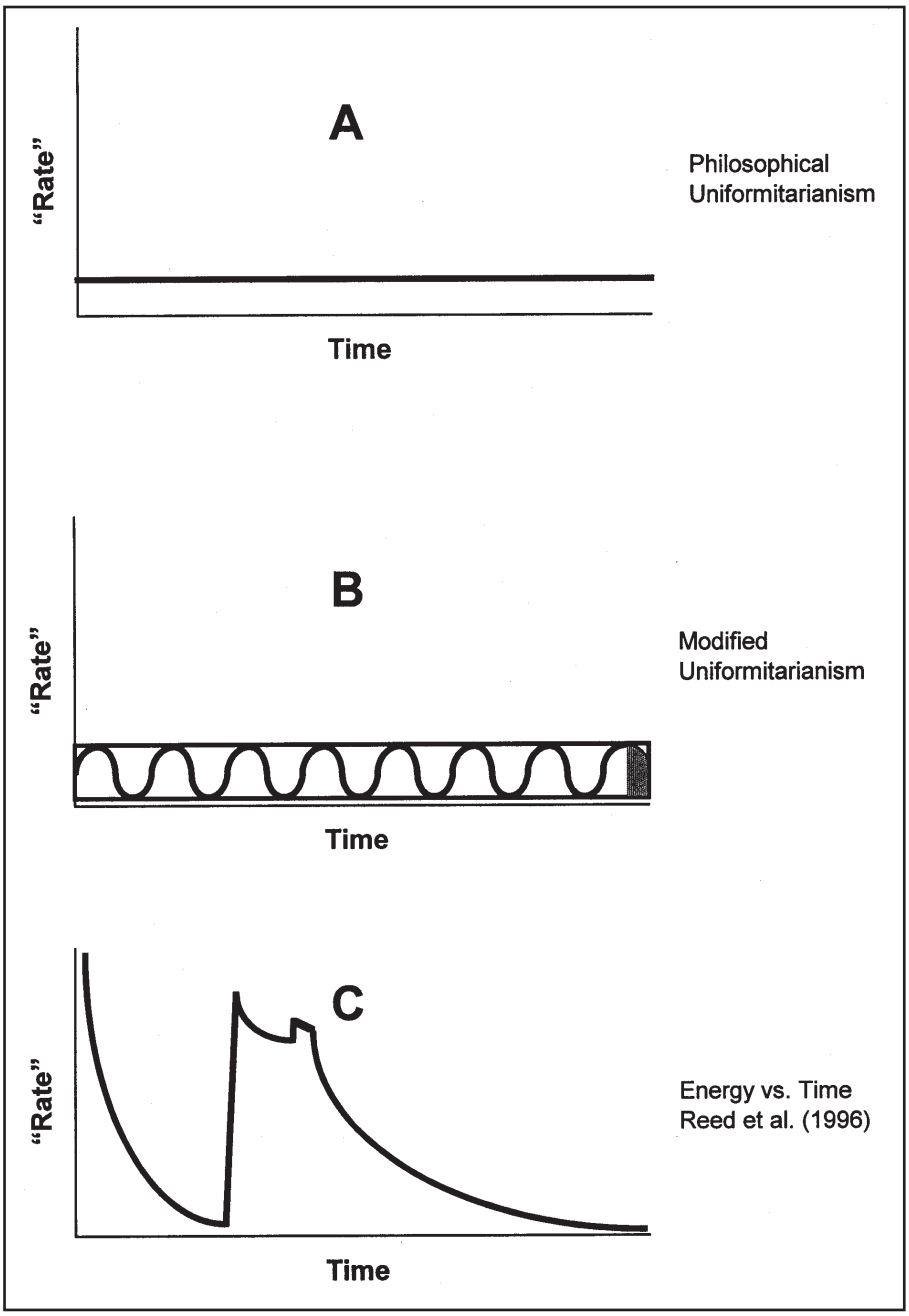

Figure 2. Comparative illustrations showing strategies for interpreting the past. Methods are referenced to rates of geologic processes. Figure 1A, labeled "philosophical uniformitarianism" shows an invariant rate of process required for confident extrapolation of interpretation into the past. This graph illustrates the Principle of Temporal Invariance. Figure 1B, labeled "modified uniformitarianism", shows how the term is defined and applied at present. The shaded area represents historical observation of processes, although it cannot be shown to scale on the time axis (it would not be visible if it was). Figure 1C is the time vs. energy plot from Reed et al. (1996). An entirely different method is employed; geologic processes are not extrapolated from present observations, but are deduced from revealed accounts found in the Bible.

How does natural history fit into this framework? In the area of metaphysical reality it is obvious that natural history affirms and accepts Naturalism. There is no reference to God, the history of nature supercedes the history of man, and natural history is self-consciously the search for relicts of evolution. A commitment to evolution and the need to understand origins and development drives natural history. In the area of epistemology, natural history affirms its method as being "scientific". There is no place for revelation, speculative theology, rationalistic philosophy, or even historiography in natural history. Few are even willing to concede that natural history may be a mixed question, and even then the mix is between positivist science and positivist history. Finally, in the area of history, the link between uniformitarianism and natural

history is self-evident. In the modern understanding, uniformitarianism is the first commandment of natural history.

Inconsistencies between Natural History and Naturalism

Since modern natural history is inextricably linked to Naturalism in its definition, its scope, and its method, the failure of natural history to conform in *all* of its aspects to Naturalism must have one of two consequences. The first, and least severe, would be the requirement that natural history be adjusted to a different set of metaphysical and epistemological presuppositions to provide consistency and coherence within another worldview. The second possible consequence would be the complete failure of natural history as an enterprise. I propose that the first consequence is possible, but only by realigning natural history to fit a Christian worldview. The refusal to make that readjustment can only lead to the logical incoherence and ultimate end of natural history as presently understood. Before the task of outlining such a readjustment is undertaken, I will demonstrate its necessity by reference to natural history's failure to pass formal tests.

Natural history fails formal texts of consistency by incorporating presuppositions of biblical Christianity. Having developed inside a culturally dominant framework of Christianity, it was unlikely that nineteenth century geologists could entirely divorce themselves from its presuppositions. Their inability to apply critical scrutiny to their own assumptions probably resulted in part from their denial of the importance of philosophy and theology. Although their venture may have appeared at that time strikingly antithetical to Christianity in its denial of the historical validity of the Genesis records, the passing of western culture into a post-Christian and post-modern phase this century has unmasked how unconsciously biblical they really were. An examination of Table I is all that is required to establish this point. The status quo can only be maintained if natural historians can demonstrate how Naturalism consistently provides justifications for the same presuppositions shown in Table I in a manner superior to that of Christianity. As concluded in Reed (1996a), it cannot because the presuppositions of Naturalism are justified ultimately by biblical theology, and ironically, many of them by reference to the biblical doctrine of creation (Glover, 1984).

Natural history also fails formal tests of consistency because its modern foundational assumption of uniformitarianism fails similar tests (Reed, 1998). Uniformitarianism cannot be maintained consistently as logically required by epistemological positivism. When pressed, advocates of natural history default to the uniformity of natural laws over time and space (Reed, 1998; Gould, 1997). However, the assertion of even uniformity cannot be defended empirically; it is the historical and logical outgrowth of the biblical doctrine of the nature of God. Naturalism cannot consistently support either uniformity or uniformitarianism apart from wishful thinking (Reed, 1998).

Finally, natural history fails tests of consistency because metaphysical naturalism requires the hidden use of biblical presuppositions as described in Reed (1996a). Since modern natural history is interwoven with metaphysical naturalism (there is no God, and no revelation), then the unentangling of natural history will require that many parts of it be cut out in order to save any of it at all.

Natural History within the Biblical Christian Worldview

History is an essential part of the biblical worldview. It provides the arena for an eternal God to develop relationships with finite men. Instead of universal laws of nature, Christians concern themselves more with the nature of God, and understand Him better through the inspired record of His dealings with many individuals over many generations. The concept of learning the lessons of history takes on a special meaning in biblical categories. Biblical theology is littered with ethical demands illustrated by history lessons. The apostles' admonitions to imitate the life of Jesus carry across the centuries with perfect application. God is the point of reference for all temporal events, and the multiplicity of these events can be rationally integrated in a comprehensible fashion by men in this way.

History is freed from all of the philosophical errors of autonomous knowledge by reference to the unchanging nature of God and the infallible revelation of Himself and past events as recorded and transmitted in the Christian Bible. History in the Christian worldview does not require an extensive self-justification, and its value is clear in the context of our relationship to God and our knowing Him. Collingwood's (1956) need for history to be the rethinking of thoughts of the past is spurious. Concerns about the preservation of knowledge adequate for the historical enterprise and all of the rest of Descartes' objections are resolved in revelation (assuming the omniscience of God). History is good. History is possible. History is a means to know God.

Natural history in Christianity would then have no temporal break from history *per se* as it does in Naturalism. Since reality in both space and time is resolved by reference to the mind of God, then history as knowledge of the past becomes dependent on God's testimony, rather than the endless speculations of trained historians. Like nature, there is a sense in which history reveals God to man. Collingwood (1956) was only half right in his assessment of the purpose of history. John Calvin (1559) corrects the oversight by noting that true knowledge consists of knowledge of God as well as ourselves. Lessons from history are drawn in the Bible, implying that we can

validly draw similar lessons from history that we learn apart from the Bible.

How then would the subset of natural history differ in the Christian worldview from history in general? One way is to emphasize the object and purpose of the study, rather than its method. The object of natural history would still be nature, but the metaphysical background relating nature to God and man would play a more prominent role. The purpose of natural history would be defined in gaining knowledge of God and in exercising the dominion commanded in Genesis. The meaning of natural history is ultimately theological, and we should expect that the basic meaning would be supplied in the Bible. For example, explanations about the meaning of the Genesis Flood are found in several places in both the Old and New Testaments. Natural history can provide many details and insight into the meaning of history in general.

Natural Historiography

All disciplines require a foundation to justify the truth claims that are made inside the discipline. The foundation should, at a minimum, speak to the definition, value, scope, and method of the discipline. Traditionally, historiography has spoken more to the method, but the failure to evaluate aspects of the philosophy of history has been shown by Clark (1994) to be a significant weakness of modern historiography. This weakness can be resolved by providing an explicit context for a field of knowledge within a comprehensive worldview. In fact, the definition, value, scope, and method of history and natural history can all be addressed by providing such a context.

The Biblical Christian worldview can help provide a definition for natural history. Collingwood (1956) defined history by four criteria that display a philosophical commitment away from Christianity. Each of his criteria requires modification within a biblical worldview to correct what turns out to be a truncated vision for history. He states (p. 9) that history is an inquiry; it involves asking questions about what we do not know as opposed to the recording of events that we already know. However, Clark (1994) demonstrates that a philosophical base is required to direct the asking of the questions and the methods by which they are asked and answered.

But though a historian can get along fairly well without philosophy, history cannot. All statements, historical as well as physical, that claim to be true must be based on some theory of truth. All statements presuppose some sort of general epistemology. And therefore, the practice of history depends on a philosophy of historical truth. (Clark, 1994, p. 50).

Collingwood (1956, p. 9) also states that history is a record of human actions as opposed to those of the gods. This definition presupposes that human actions are the only meaningful and knowable ones in the universe. Natural history cannot survive inside this definition, since most human actions are not a significant part of natural history. In the biblical Christian worldview human actions impact natural history because of the temporal proximity of men and nature since the beginning, and because of the role given to man at the creation. The causal relationship between man's sin, for instance, and the Genesis Flood is acknowledged. Collingwood's (1956) definition also assumes that either God does not exist, has not acted in history, or cannot be known. Any of these assumptions are axiomatically rejected by Christianity, which overtly teaches that God does act within history in an obviously intelligible fashion.

Collingwood (1956, pp. 9–10) also states that history is based on the interpretation of evidence. He again displays a tendency to truncate the historical enterprise. History can also include the gathering and sifting of evidence prior to its interpretation. Interpretation itself is also a large problem, as Clark (1994) demonstrates. Collingwood presents no basis for interpretation by which the problems formulated by Descartes are answered. Christianity does answer those problems by referencing the knowledge of history and its proper interpretation to God. Although historians may be challenged to interpret the past correctly, God is not.

Finally he avers that the purpose of history is to teach us about man (Collingwood, 1956, p.10). John Calvin (1559) displays a fuller appreciation of knowledge states at the beginning of his Institutes of the Christian Religion, "Nearly all the wisdom we possess, that is to say, true and sound wisdom, consists of two parts: the knowledge of God and of ourselves". (McNeill, 1960, p. 35). Collingwood's (1956) tendency to truncate history is again evident. The purpose of history is to enhance our understanding of our own relationship with God, with each other, and with nature by discovering how God has directed each of these relationships in the past. Life is short. If we are unable to learn from others, then our experience through life is truncated.

A Christian definition of history should be broader than Collingwood's (1956). It would consist of man's incomplete knowledge of the past, both the myriad of events and their various levels and shades of meaning. History must be seen as revelation: a general revelation for those aspects outside of the biblical record, parallel to the general revelation provided in nature; and a specific revelation of those events and meanings recorded in Scripture.

Under this worldview, natural history operates as a subset of history. History in general would include the investigation of events of the past and their interpretation in the context of the worldview itself. This definition overcomes the problems developed by Clark (1994) that try to make history a virtually autonomous branch of knowledge. No branch of knowledge can exist independent of axiomatic

metaphysical and epistemological assertions. Recognizing this dependence eliminates the inherent uncertainty imported by other definitions of history that do not explicitly recognize the connections. For example, Collingwood (1956) discusses the task of the historian to interpret the events of history, but provides no basis by which to perform the interpretation. Agreement by all historians over the meaning of historical events is unlikely. Having consistency within a single worldview at least provides coherence between philosophical positions and historical interpretation – a coherence not presently enjoyed in the present relativistic milieu.

The Biblical Christian worldview can help provide a scope for the history enterprise. By recognizing the relationships that exist between God, man, and nature, the historian can interpret events of the past by reference to all three, instead of just man. The preference of Collingwood (1956) to restrict history to man is stultifying to historical investigation because it ignores critical aspects of the task. As Descartes (1637) noted, the selection of historical material is performed outside of history. The choice of events to discuss can at least be driven by consistency with a given worldview. For example, the historical events surrounding the life of Abraham take on a different significance if the actions of God and the meaning provided by Abraham's relationship with God are allowed to be a part of the historical enterprise. Likewise, the scope of natural history should be defined by reference to a worldview. For all practical purposes, it already is, but the connections are hidden and secret, and not out in the open. Studying the historical events in terms of their biological and geological significance cannot be divorced from their connections with God and man.

The Christian worldview can help clarify the value of history. Value must presuppose purpose of some type and purpose must presuppose mind. History as a channel of revelation gives an ultimate meaning to historical events. All events are significant since all are ordained by God and work to His purposes and ends. The possibility of deeper insight into the mind of God should motivate a historian much more than Collingwood's (1956) dubious goal of rethinking the thoughts of historical figures. Random natural history is thus impossible, and natural history must derive its value from exploring the mind of God, rather than the mind of man or the mindlessness of nature.

Understanding the definition, scope, and value of history within the Christian worldview helps develop a unique method. There is a dual method to the study of history that cannot be accepted by positivists or rationalists. Since history exists as revelation, it parallels the recognition of the dual source of revelation, which is contained in both nature and Scripture; the latter being recognized as superior to the former. If history is to function as a form of revelation, then the primary facet is special revelation in the Bible. As God's special revelation, the historical events, the historiography, and the theology/philosophy of history are all presented. Recognizing each of these aspects in the Bible frames historiography in the biblical Christian worldview. The second pathway of knowledge lies in the empirical investigation of events outside of the Bible, along with the indirect interpretation of their meaning. The significance of events is confirmed by the Bible, and the methods of interpretation are also provided by example. Natural history functions in exactly the same way. The outline of historical events and their meaning is explicitly supplied. Details outside the biblical accounts are investigated empirically and interpreted within the theology of the Bible. Since the Bible is superior in its certainty to empirical investigation, one of the rules of natural history is then to interpret phenomena in light of Scripture and not the Bible by phenomena. Another rule would be to search the Bible for the meaning of natural historical events first, and then use biblical principles to complete the task. The existence of the Bible allows for as great a certainty to be attached to historical endeavor as to the scientific (Reed and Froede, 1997).

Conclusions

The distorting effects of the naturalist worldview in its materialistic metaphysic, its positivist epistemology and its uniformitarian historiography have created a false understanding of both history and natural history. The comparative analysis of presuppositions, methods, and conclusions performed in this paper suffices to demonstrate irreconcilable tensions between Naturalism and a philosophy of both history and natural history. In contrast, the biblical Christian worldview defines the meaning, method, and factual framework of both history and natural history. But consistency must also be achieved within the Christian worldview. Doing so has demanded that both history and natural history be redefined in their scope, value, and method.

What does this mean for Christians interested in natural history? Three conclusions are obvious. First, the advantages of history and natural history having a place within an integrated worldview cannot be realized unless the integration is consistent.

> In any case, the conclusion is that history must, with all other subjects, be fitted into a comprehensive system of philosophy… Most historians are oblivious to the philosophical difficulties that beset their subject. But unconsciously they must adopt one position or another. Sometimes they utilize several different positions without being aware of their inconsistency. (Clark, 1994, p. 18).

Greater attention must be paid to those links. For example, Christians who desire a biblical worldview, but wish to accommodate the fads of modern natural history must recognize their own inconsistencies. The age of the earth does matter, because link by link it reaches into every corner of the origins debate. Ultimately, it impacts such fundamental issues as the existence of God and the possibility and veracity of revelation.

Second, the current "scientific" approach to history is invalid. History within a biblical worldview has a dual method. The first and most basic is the knowledge of the facts and meanings directly revealed in Scripture. The second is the empirical investigation of additional facts and meanings not provided in Scripture. The two facets of history stand in a curious juxtaposition; the first is epistemologically foundational but the second is the facet of the most intense human activity. This level of activity pushes it into the center of attention, but a balance must be maintained to prevent future errors similar to those of the Enlightenment.

Finally, the naturalist presuppositions of modern natural history are refuted by this vision of history. There is no time when nature operated autonomously out of the control of God or, for the most part, the dominion of man. The meaning of history is not found in a natural process of evolution (or any other natural process; e.g., Hegelian or Marxist dialectic). In fact, there is no place for history within the naturalist worldview that leaves room for consistency and coherence. The historical enterprise, including natural history, is only rescued by the assumptions granted and justified within Christian theology.

What is the future of natural history? In the Christian worldview, natural history can function in symmetry with history; both firmly based on a set of axioms that solve metaphysical and epistemological issues of historiography. It can include the investigation of the physical, chemical, biological, or geological aspects of events of the past. However, the ultimate meaning, methods, and factual framework must be based in special revelation – the Bible. The second aspect of natural history's method, empirical investigation, is open-ended and the proper domain of intense study. Science plays a part, in a forensic sense that affirms natural history as a mixed question. But boundaries exist, and the historian who strays will find, like many this century, only a morass of uncertainty and frustration outside of the borders of revelation.

Glossary

Dollo's Law: The axiom that evolution is irreversible.

Epistemology: The category of philosophy that addresses the problem of knowing.

Existentialism: A modern school of philosophical thought that holds to the impossibility of systematic knowledge. Man authenticates his own existence by making choices in spite of the meaninglessness of his existence.

History: Used in three senses. The first is the events of the past. The second is the record(s) of those events. The third is the discipline that studies history in the first sense by use of histories in the second sense.

Historiography: The principles and methods of historical study. In this paper, it would also include aspects of the philosophy of history.

Marxism: The modern worldview named for its founder, Karl Marx, that embraces a theory of dialectical materialism to explain reality. It is best known for its emphasis on economic determinism.

Natural History: The discipline concerned with the history of nature. In the present-day context of the naturalist worldview, it is considered a facet of science and used almost synonymously with historical geology. In the biblical Christian worldview, it would be a facet of history, though distinguished from human history by method.

Naturalism: The dominant secular worldview of the last two centuries; it integrates metaphysical materialism, epistemological positivism, and uniformitarianism into an atheistic explanation of reality.

Physical Determinism: A nineteenth century theory of history that explains all events by reference to the properties of matter, particularly motion and position.

Positivism: A theory of knowledge with many variations of the central theme of the empirical or scientific derivation of truth to the exclusion of philosophic or theological paths.

Scientific Naturalism: A theory of history that predicts the discovery of absolute laws of history in the same sense of laws of science and, also similar to science, by empirical investigation.

Worldview: A comprehensive and integrated understanding of reality in all of its aspects.

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Book Review

The Design Inference: Eliminating Chance Through Small Probabilities by William A. Dembski
Cambridge University Press, Cambridge, UK. 1998, 243 pages, $59.95

This title has appeared on at least one list of the twentieth century's "Top 100 Books." The author refers to it as a monograph, a revised version of his philosophy dissertation from the University of Illinois at Chicago (1996.) With additional studies in mathematics, probability theory, and complexity theory Dembski comes to his subject well qualified. The problema How to distinguish events which are the result of design from those due to regularity (natural law) or to chance.

The design inference does not indicate what the design agency was, nor how it operated. These are separate problems. But by demonstrating "patterned improbability" the indication of design in an event precludes chance as an agent.

Dembski's text is dense with symbols and equations, although he employs some intriguing practical examples illustrating improbabilities. The reader will do well to focus on a flow chart entitled "The Explanatory Filter" (p. 37), which illustrates a clear and simple method for distinguishing chance from design.

Of special interest to creationists is a case study, "The Creation-Evolution Controversy", pp. 55-62. Further considerations regarding the same argument are discussed in the chapter on Small Probability, in which the claims of Richard Dawkins as to spontaneous origin of life are answered.

The chapters on probability and complexity theory condense a great amount of material into some 30 pages each. Other researchers have written large books on each of these subjects, and Dembski's abbreviated treatment will be difficult to follow for all but the mathematically trained.

In an epilog, Dembski states that he believes the main significance of the design inference for science is that it detects and measures information. Where systematic information is found, design and not chance must be inferred. Other researchers also have concluded that information is the central problem of biology, and is essential to a theory of human consciousness.

The book has an index and an extensive list of references.

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