THE SCIENTIFIC EXISTENCE OF A HIGHER INTELLIGENCE

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Abstract

This article gives a general overview of recent results in mathematical logic that should have a profound effect not only upon the foundations of creation-science but the foundations of all religious experiences and thought that either assume or logically require the existence of a supernatural higher intelligence. In particular, it is shown that the concept of the existence of a higher intelligence exterior to the material universe can be modeled rationally by means of the science of mathematics. It is established that human religious experiences and scientific models associated with either an assumption or an implied requirement that a supernatural higher intelligence exists are not somehow irrational in character as it is claimed by many secular scientists and philosophers. Indeed, if such experiences or creation-science models directly correlate to certain customary Bible interpretations, then the assumption of irrationality is scientifically proved to be false.

Introduction

When concepts relative to the DNA molecule are modeled by means of information theory, one aspect of the obtained theoretical conclusions seems to defy human comprehension unless a very special postulate is assumed. As Wilder-Smith (1993) states:

> We are forced to come back to basics and assume that there must have been in the beginning—at the act of creation—an organ of the kind that makes the human brain tick (but infinitely more powerful, of course) to generate the concepts of biology on a much larger scale than the human brain can ever develop.

Under the further assumption that all life throughout the universe is associated with DNA type molecules and that such natural processes are amenable to human thought, then such a higher intelligence could not be assigned to biological entities within the universe itself. Using the term natural to refer to entities, processes, and the like that are within our universe, under these assumptions, information theory leads to the conclusion that the acceptance of a supernatural higher intelligence would be needed in order to properly comprehend the model. Unfortunately, the assumption that a supernatural higher intelligence exists has been rejected by secular scientists and atheistic philosophers as not being consistent with scientific logic. Indeed, one of the greatest onslaughts against such an assumption and all of the human (religious) experiences that are modeled by using such an assumption began in earnest with the introduction of the philosophy of "rationalism." This philosophy claims that explanations for religious experiences and perceived phenomena that include supernatural entities external to the natural world are irrational in character. The concept of irrational refers to what is considered to be contrary to certain established human thought patterns.

Rationalism implies that if you cannot rationally justify the existence of such a higher intelligence, especially as such an intelligence relates to experiences within the natural world, then it is necessary to replace hypotheses stated in specified supernatural terms with hypotheses stated in natural terms. Feuerbach (1967, p. 110) stated this claim as follows:

> . . . there is no way of explaining the thousands and thousands of contradictions, perplexities, difficulties, and inconsistencies in which religious belief involves us, unless we acknowledge that the original God was a being abstracted from nature. . . .

Feuerbach (1967, p. 248) also states: "Moreover, religious ideals have always involved all manner of irrational and even superstitious conceptions." He even attacks the rationalists as being incomplete rationalists.

> . . . the rationalists take great pains to point out the obvious fallacies of religion; but these are secondary, subordinate fallacies; as for the fundamental fallacies, which have all others as consequences, the same rationalists let them stand, for they are sacred and inviolable. Consequently, when a rationalist asks an atheist what atheism is, the proper answer is: Rationalism is a half-baked, incomplete atheism; atheism is a complete and thoroughgoing rationalism (Feuerbach, 1967, pp. 259-260).

From Feuerbach's viewpoint, the hypothesis of the nonexistence of a higher intelligence exterior to the natural world, of God, is the ultimately correct hypothesis from which to begin a complete rationalization for all religious experiences and perceived phenomena. Since Feuerbach's lectures, these ideas have been championed by numerous influential philosophers, scientists and social reformers. Marx (1960, p. 24), using logical terminology, states it by writing: "Christianity . . . , cannot agree with reason because "worldly" and "religious" reason contradict each other." Santayana (1905, p. 159), utilizing a destructive term taken from the language of logic, writes:

> . . . the grand contradiction is the idea that the same God who is the ideal of human aspiration is also the creator of the universe and the only primary substance.

In this age of scientism, influential humanists, scientists, journalists and the like continue to parrot these claims of Feuerbach with the added proviso that the assumption of the existence of a supernatural higher intelligence will contradict absolutely the logical procedures accepted by the scientific community. One quotation will suffice as an example of this worldview. H. J. Eysenck (1973, pp. 89-90) writes:

> Thus the first part of my definition of humanism would involve a stress on the use of reason in dealing with inanimate nature and with other human beings. . . . This inevitably involves the rejection of revealed religion. . . . All humanists

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> are agreed that religion is not based on reason. . . . To me, the word reason in this respect implies science. Science is the embodiment of the rational attempts to solve problems posed by nature or human beings. . . . Reason, to me, marks out the method to be used by all humanists.

Individuals who have either had personal religious experiences or argue for the scientific acceptance of such a higher intelligence certainly do not consider their contributions as irrational. As exemplified by the above quotations, many in the philosophic and scientific world do consider as irrational the assumption that such an higher intelligence needs to be supernatural in character and this has inspired their attempts at rationalizing religious experiences, or ignoring creation-science models and evidence for the acceptance of such models.

If it could be demonstrated scientifically that assuming the existence of a supernatural higher intelligence is rational in character, then this would destroy, utterly and completely, the philosophical foundations for the philosophy of rationalism as it is applied to religious experiences and thought. It would eliminate the basic philosophical argument against the existence of a supernatural deity. Atheism would have lost its most profound intellectual foundation. Further, the necessary conclusions of information theory applied to the DNA molecule would be upheld and, indeed, the basic foundation of creation-science could no longer be rejected on scientific grounds. But what would constitute a scientific demonstration that it is rational to postulate the existence of a supernatural higher intelligence?

Timothy Ferris (1970, p. 157) writes: "Scientific theories must be logical. They must be expressible in terms of mathematics, the most rigorous logical system known." Ferris overstates his conclusion when he writes that this "must" be the case. Actually, the modern scientific approach to theory is rather more vague on the subject of rationality. What can be said is that if a theory can be closely associated with a mathematical structure, then it would follow the most rigorous logical system known.

Human Intelligence

No attempt will be made in this paper to give a nearly complete definition of human intelligence. But one of the crowning achievements of humanity has been the construction of a symbolic language as a substitute for oral expressions. Modern computer technology also allows for visual or audio impressions that are captured by mechanical devices to be translated into a symbolic language that can later reproduce, with great clarity, the original visual or audio content. Thus, for our purposes, human intelligence will include the ability to express thoughts and perceptions in a symbolic language comprehensible by others and, further, to present written arguments that follow patterns that correspond logically to procedures accepted by the majority of humanity.

Throughout this discussion, it will only be assumed that a symbolic language corresponds to a portion of human oral expression, human perception and mental impression. A symbolic language L is constructed intuitively from two or more symbols by juxtaposition and yields geometric configurations called symbol strings (i.e. strings of symbols). For every natural number n, there theoretically exists more than n distinct symbol strings by this process. Similar symbol strings are recognized by human perception to be equivalent.

In 1930, Tarski characterized and abstracted mathematically those general procedures that correspond to the most significant human mental processes that, for finite collections of such symbol strings, yield deductive conclusions. The mathematical operator so obtained is termed a *consequence operator*. In modern mathematical logic, there are two types of such logic operators. The most basic is the *finitary* consequence operator of Tarski (1930). However, there is a similar operator that is more general in character and is often termed simply as a consequence operator.

The small amount of set-theoretic symbolism that is employed in this paper is taken from a standard high-school algebra course and is only considered as an abbreviation. Indeed, each symbol is specifically defined. No actual mathematics appears in this paper. The formal mathematics can be found in Herrmann (1987, 1991). The symbol used to represent the finitary consequence operator is the symbol Cn. The more general consequence operator is often denoted simply by C. Informally, such operators take any subset A of L (i.e. $A \subset L$) and yield all those members of L that can be deduced from A (i.e. $Cn(A)$). A basic requirement is that the assumed premises can always be deduced logically (i.e. $A \subset Cn(A)$). Once a human being has deduced all of the consequences, then no more consequences can be deduced from the same set of premises (i.e. $Cn(Cn(A)) = Cn(A)$). For C, if one set of premises B is a subset of another such set A (i.e $B \subset A \subset L$), then deductions from B form a subset of those deductions from A (i.e. $C(B) \subset C(A)$). For a finitary consequence operator, the human argument of using only finitely many symbol strings from a set of premises A to obtain a deduction is modeled by the additional requirement that if x is deduced from A (i.e. $x \in Cn(A)$), then there is a finite set of premises $F \subset A$ such that x can also be deduced from F. One can show that this last requirement also implies the last property listed for the general consequence operator C. Consequence operators that correspond to specific deductive processes such as those defined for propositional, predicate, and higher-order formal languages (i.e. those logical processes used in modern scientific discourse) can be further characterized so that each can be differentiated one from another.

What Tarski did was to take a concrete everyday experience and mathematically abstract its most basic properties. From this abstraction, mathematical arguments establish other properties. These other properties may then be interpreted with respect to the original linguistic terms that generate the Tarski abstraction. Thus new insight is gained into what constitutes human thought patterns. As will be discussed later, the same type of formal abstraction is possible for certain dialectic logics.

In 1978 (Herrmann, 1981), Tarski's consequence operator theory was investigated through application of the new mathematical discipline called *Nonstandard Analysis* for the specific purpose of finding a nonnumerical model for the concept of subliminal perception. Nonstandard does not mean that different mathematical procedures are employed. This is a technical

term relative to abstract model theory. After many years of refinement, the basic properties of nonstandard consequence operators appeared in mathematical journal form (Herrmann, 1987) and book form (Herrmann, 1991). Cosmological interpretations of these results have been reported upon numerously many times within other scientific and philosophic journals as well. However, also of significance is a linguistic interpretation of these fundamental results. Generating the mathematical structure is not extremely difficult. But interpreting it linguistically has been arduous.

A Special Linguistic Interpretation

In order to interpret a formal mathematical structure relative to different disciplines, a correspondence is created between terms in one discipline and the abstract entities of the structure. This actually yields a many-to-one correspondence since numerous disciplines can be corresponded to the same mathematical structure. Each time this is done, a *mathematical model* is constructed. My interest in this paper is a specific correspondence between some terms relative to intelligence, linguistics, and similar human activities associated with a physical world and the mathematical structure. With respect to nonstandard structures, however, many new objects emerge that are not present within the standard structure. Although these new objects have all of the properties of the original entities and thus the same properties as the nonabstract objects from which they were originally abstracted, they also have many additional properties not shared by any of the original entities. What one does, in this case, is to create new terms that have a similar linguistic-like character as the original linguistic terms and assign these new terms to appropriate unassigned entities within the nonstandard structure. But can you assign a concrete dictionary meaning to these new terms?

A dictionary meaning to these new terms will not carry the appropriate content. One reasonable method to obtain an in-depth comprehension is to have a strong understanding of the workings of the mathematical structure and to reflect upon the relations between these new linguistic-like terms themselves, as well as between the new terms and the standard linguistic expressions. What this means is that you must study the written statements depicting these relationships. The model that this creates forms a portion of the *deductive world model* or, simply, the *D-world model.* There is, however, a new method that has been devised that renders these new concepts comprehensible without the necessity of an in-depth study. The method is termed *negative comparison.*

Negative comparison is a description as to how these new concepts negatively compare with the original standard concepts. Certain aspects of such linguistic type interpretations have been discussed elsewhere (Herrmann, 1991) but not as it directly relates to the concept of a higher intelligence. Further, this present interpretation uses a few special terms not previously introduced. The linguistic-like terms that correspond to new abstract entities that, at least, have similar properties as the original have the prefix "ultra-" attached. It is always to be understood that prior to each statement one should insert an expression such as "It is rational to assume that . . ." where the term "rational" means the logical processes science uses to develop its most cherished theories. To be as simplistic as possible within this section, only one of many distinct logical processes will be compared. What can be said about this one process will hold for all similar processes that can be characterized by the consequence operator. Note that logical processes are also termed *mental* processes.

The use of the "ultra-" prefix does not remove the term from being only a defined mathematical abstraction. Within a description, additional phrases that correlate such terms to a specific discipline are either inserted or, at least, understood by the reader. Relative to a supernatural higher intelligence, one basic correlating phrase is "entity within the universe." This signifies any corporeal entity of which the human mind can conceive and which makes its home within the material universe. The insertion of this phrase is the basic change in the interpretation fro those previously used. Other obvious correlating terms will appear when relationships between the ultra-objects and the concrete linguistic entities from which the model was generated are discussed.

There exists an ultra-language, denoted by $^*P$, that at least has all of the properties of the most simplistic of human languages, the propositional language P. The language P is a subset of $^*P$. A simple informal propositional language P can be constructed from but two primitive words such as "house" and "door" and the usual additional symbol strings such as "or" "and" "not" and "implication." In this case, all of the expressions in P are meaningful in the sense that they impress on the human mind various images. Assume that all of the members of P are meaningful in this sense. There are many members of the ultra-language $^*P$ that cannot be used for any purposes by, and have no specific meaning to, any entity within the universe. However, all members of $^*P$ are ultra-meaningful. The mathematical model would require "ultra-meaningful" to correspond to a statement such as "they ultra-impress on an ultra-mind various ultra-images." Remember that deep understanding of what these new terms might signify requires an investigation of *the relationships* between such terms as expressed by hundreds of such statements. Suppose S denotes the consequence operator that characterizes the simple human mental process called propositional (sentential) deduction. Then S is a finitary consequence operator and all of the consequences $S(B)$ that can be deduced from a set of premises $B \subset P$ are obtained by deduction from the finite subsets of B. Now there exists an ultra-logical process, denoted by D, defined on the subsets of the ultra-language $^*P$, where D has, at least, the same properties as those of the logical process S when D operates on finite subsets of the humanly comprehensible language P (Note 1).

What happens when the ultra-mental process D is applied to any finite subset F of the humanly comprehensible language P? The set of consequences $D(F)$ contains all of these consequences $S(F)$ comprehensible by entities within the universe (i.e. $S(F) \subset D(F)$) and many that are not comprehensible by entities within the universe. Using consequence operator terminology, when this occurs, the ultra-mental process being modeled by the consequence D is said to be *stronger than*

the mental process modeled by *S*. It is this and other, yet to be described, properties that led to the selection of the term "ultra" as a prefix. Further, no entity within the universe can duplicate the ultra-mental process *D*, and this process also has numerous properties that are not comprehensible by any entity within the universe (Note 2).

There is a delicate analysis that can reveal the composition for some of the ultra-words in $^*P$, where *w* in the ultra-language $^*P$ is an ultra-world if it is not a member of *P*. What this analysis details is often quite startling. For example, there are ultra-hypotheses, a single one of which is denoted by *w*, that cannot be comprehended by entities within the universe and that, when the ultra-mental process *D* is applied to *w*, yields a consequence that *can be* comprehended by entities within the universe. These ultra-hypotheses exist in subsets of $^*P$ that, at least, have the same characterizing properties as sets that describe human behavior, natural laws and the like. For example, if a sentence *x* in *P* describes a certain human behavior trait, then, although there may not appear to be a hypothesis *h* in *P* from which *x* can be deduced by the human mind, there does exist in $^*P$ an ultra-hypothesis *w* such that the ultra-mind process *D* when applied to *w* yields the conclusion *x*.

There are other mental processes that seem to correspond to intelligence. One of these is choosing from a list of statements, that is potentially infinite, a specific finite set that is meaningful for a particular application. Embedding this finite choice process into the deductive-world model yields the same type of conclusions as those for the ultra-logic *D*. This ultra-mind process cannot be duplicated by any entity within the universe, it is stronger than all such mental processes and has properties that in all cases improve upon the mental process of finite choice (Herrmann, 1991).

Another human reasoning process is the dialectic. Basic characterizing expressions can be listed for many such dialectics (Gagnon, 1980). Such dialectics can be applied to any language *E* constructed from two or more symbols. The basic ingredients are a set of theses *T*, a set of antitheses *A*, and an operator *Sy*, among others, which yields a synthesis *x* for any $t \in T$ an some $a \in$ A. For all the dialectics listed by Gagnon (1980), it is not difficult to show that there exist sets of symbol strings *T* and *A* and operators such as *Sy* that when embedded into the deductive-world model become sets of ultra-theses, ultra-antitheses and, an ultra-mental process, the ultra-synthesis operator $^*Sy$ (Herrmann, 1992). Once again, the same type of conclusions hold for these ultra-dialectics as hold for the ultra-logic *D*.

It appears that all forms of such mental-like processes are improved upon, to an extreme degree, by their corresponding ultra-mental processes. When the collection *UM* of ultra-mental processes is compared, as a whole, with the corresponding set *M* of mental processes that are displayed by humanity, then it appears reasonable to characterize the collection *UM* as representing a higher intelligence. The logical existence of *UM* is obtained by use of the most fundamental tool of modern science and establishes that the acceptance of the existence of a supernatural higher intelligence is scientifically rational and verifies the conclusions discussed in the introduction to this paper. Moreover, any properly stated model *MH* that either specifically utilizes such a postulate or logically implies the existence of a supernatural higher intelligence cannot be rejected as somehow or other not being scientific in character. Indeed, if such a model *MH* explains past natural events or human experiences, and predicts other events as they are observed today, then the scientific method explicitly states that such models are to be considered as good as or even better than other models.

Although this discussion could be concluded at this point, one interesting question is suggested. Has such a higher intelligence been previously described using terms and concepts that parallel those for the above ultra-mental processes?

Significance of Results

Although a comparison with the doctrine of all of the major religious belief systems has not been made, there does exist a strong correlation between these results and statements that appear in the Jewish and Christian Bibles. The Bible, when literally interpreted, often describes God's attributes in terms of a linguistic or a mental model. This is especially the case when the mind of God is compared to the mind of man. In every single case, the "mind of God" Scriptural statements are modeled by the above special deductive-world interpretations. This is a startling fact since the deductive-world model was not created originally for application to theological concepts.

As examples, every time the Scriptures state that God "speaks" to a prophet, or a Jew or Christian then the above special interpretation is verified. Indeed, all statements that compare God's wisdom, intelligence and the like with that of humanity are satisfied by this special interpretation as are numerous statements relative to the supernatural means that God employs to communicate with an individual.

Here is a partial list of such statements: Genesis 1:26; Numbers 23:19; Deuteronomy 33:26; 1 Kings 8:23, 27; 2 Chronicles 2:5; Job 9:4, 10, 11:7, 8,12:13, 15:8, 28:12-13, 20-24, 32:8, 33:12, 14, 37:23, 38:33, 36; Psalm 35:10, 53:2, 77:13, 86:5, 93:5, 94:11, 119:27, 99, 100, 139:2, 6, 17-18, 147:5; Proverbs 2:6; Ecclesiastes 2:26, 3:11, 8:17; Isaiah 55:8-9; Jeremiah 10:10-13, 17:10, 31:10; Daniel 2:21-22, 46; Matthew 10:20; Mark 13:12, 13; Luke 6:8, 10:21, 22, 21:15, 24:45; John 8:47, 10:16, 27, 12:40, 14:26; Romans 11:33-34; 1 Corinthians 1:10, 19-20; 2:10, 13, 16; 2 Corinthians 10:4; Ephesians 1:17; Colossians 2:3, 4; 2 Timothy 2:7; James 1:5.

Even if not specifically related to doctrinal statements, the logical existence of a supernatural higher intelligence is obviously significant or any supernaturally related belief-system and modern creation-science. It is no longer advisable to categorize human religious experiences and scientific models that are associated with a supernatural higher intelligence as being somehow or other irrational in character. Indeed, if such experiences or creation-science models directly correlate to a literal Bible interpretation, then the assumption of irrationality can be scientifically proved to be false. Finally, since application of the basic tool used for modern scientific research has established that it is scientific to assume the existence of a supernatural higher intelligence, a properly constituted creation-

science model that relies upon this assumption is not "pseudoscience", as has been claimed. Note once again that if such a model increases our capacity to understand the workings of the natural realm, then the scientific method specifically states that such a model is the preferred model.

End Notes

1. Mathematically the purely subtle consequence operator C_1 on all of the internal subsets of $^*P$ is D. See Herrmann (1987), Theorem 4.5.
2. This comes from the fact that the formalized first-order theory of the propositional calculus is an infinite set and as such when embedded into the D-world model this metatheory generates infinitely many incomprehensible statements that behave like logical rules for the ultra-logic D.

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BOOK REVIEWS

Bones of Contention—A Creationist Assessment of Human Fossils by Marvin L. Lubenow. 1992. Baker Book House. Grand Rapids. 295 pages. $12.95.

Reviewed by Michael J. Oard*

It is a pleasure to review the fruits of 25 years of creationist research on fossil man. This book is well written and documents numerous examples of circular reasoning in the analysis of human fossils and dating methods. Marvin Lubenow shows that the human family of the past not only includes Neandertal Man but also *Homo erectus.*

Chapter 1 starts with an aura of worship—as scientists gathered around a once in a lifetime collection of our ancient "ancestors" in the summer of 1984. These fossils included many of the real specimens, not casts that most paleoanthropologists evaluate during their careers. In spite of the claimed accurate cast duplication, many experts departed realizing that casts lack many important details. Marvin Lubenow moves from the worship scene to document in Chapter 2 that the field of paleoanthropology, based on Carl Sagan's definition of science, lies outside the realm of science. Paleoanthropology is history based on many assumptions, including the philosophical belief of naturalism.

I was surprised to find that instead of enough fossils barely to it into a coffin, as one evolutionist once stated, there were over 4,000 hominid fossils as of 1976. Over 200 specimens have been classified as Neandertal and about one hundred as *Homo erectus.* More of these fossils have been found since 1976. This should be enough for creationists, as well as evolutionists, to either classify them as humans or apes.

Before embarking on the status of the fossils, the author lays further groundwork. He gives examples to show how scientists have allowed their biases to rule their research, how circular reasoning is endemic to this field, how faith in evolution and the old earth is pervasive, and how the self-correcting boast of science is shallow. The examples he uses to illustrate these claims are Marcellin Boule's flagrant misrepresentation of Neandertal Man; the famous Piltdown hoax, the authenticity of which inspired 500 Ph.D. theses; the young dating (within the evolutionary time frame) of the Taung skull, the first Australopithecine found in Africa; and the *"Australopithicus"* designation of the obviously human Kanapoi elbow joint, which evolutionists date at 4.5 million years old. The Laetoli tracks, analyzed as very human-like by virtually every investigator who has studied them, nevertheless are classified as produced by Australopithicus. The reason for this classification is simply that humans did not exist at that time. The Laetoli footprints and the Kanapoi elbow joint show how fossils are pigeonholed into time slots based on the "fact" of evolution.

This brings us to Chapter 6 and the Neandertal problem. Evolutionists do not know where Neandertal Man came from nor where he went; they know little of how he lived. More and more fossils are being found and the picture is now emerging of a race of humans possessing unique morphological features, particularly in the shape of their skull. Neandertal Man is especially found in caves all over Europe. They are also unearthed in western Asia and Africa. These latter fossils are not very Neandertal-looking. Of special interest is a Neandertal hyoid bone that indicates Neandertal Man could indeed talk, contrary to what some evolutionists earlier asserted.

Chapter 7 analyzes a large number of perplexing human fossils. They are lumped together as archaic *Homo sapiens* with designated age ranges from 5,000 to 700,000 years old. A well known example is Rhodesian Man. They are thrown into this category because they have a somewhat different skull morphology from Neandertal Man, they are "dated" older than Neandertal, or their cranial capacity is too large for *Homo erectus.*

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