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## THE WORD

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*This article gives a summary of completed research into some of the logical processes required to accept and investigate such concepts as Divine creation, the miraculous and continual sustaining of our present developing universe. These logical concepts are directly related to Scriptural quotations. By applying new and powerful tools from applied mathematical logic it is established that all such concepts are absolutely rational and follow describable rational patterns.*

### 1. The Word: Logos and Rhema

On the back cover of each issue of the *Journal ASA* appears the following quotation taken from Hebrews 1:3, "Upholding the Universe by His Word of Power." Our major interest is to gain some understanding of the meaning of the symbol string "Word" as it appears in this quotation. Does this symbol string denote a literal written or spoken word as it might appear in some humanly established language? Is it a literal word in some language that is beyond human readability? Indeed, what possible meaning can this apparently mysterious quotation have for humanity with its limited comprehension? Non-supernaturalists would probably consider this quotation to have no rational meaning and, thus, to be devoid of any comprehensible

content. For them, these questions would also appear to be meaningless combinations of symbols. For a Christian, such questions as these have comprehensible answers.

The translations from the Greek that yield this phrase do have slight variations. The *King James* translation is ". . . and upholding all things by the word of his power." The *NIV* states it as ". . . sustaining all things by his powerful word." The *Living Bible* translation is ". . . He regulates the universe by the mighty power of his command." The *Concordant Literal New Testament* has it as ". . . carrying on all by His powerful declaration." Of the 13 New Testament translations in my personal library all, with the exception of *Phillips Modern English*, translate this Greek phrase in a manner that seems to force one to believe that it refers to a literal word. We minimally define a "literal word" as a sequential set of symbols

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formed from some fixed alphabet, that must be constructed by means of a fixed set of rules, that is sequentially inserted between other such literal words as required by yet another fixed set of rules and that has some defined meaning that can be located in a fixed dictionary. This last requirement includes the possibility that a literal word is defined as an "undefined technical term." As it will be explained, there are objects that satisfy these technical requirements, but these objects come from a language that is not humanly transcribable.

In order to be accurate, it appears necessary to consult the original Greek for a proper literal meaning. As to Greek words, we employ the standard transliterated forms. In *The New International Dictionary of New Testament Theology, Vol. 3*,<sup>1</sup> we find under the heading "word," the Greek *logos*. As one would expect, *logos* has 38 pages of analysis. On the other hand, the Greek *rhema* has less than four pages of analysis. This fact apparently indicates that the literal meaning for *rhema* is easily transcribed and not open to any vast variations. The exact Greek that is utilized in Hebrews 1:3 is a form of *rhema* and not a *logos* form. Its meaning is properly translated as follows: *rhema* literally refers to the act of "speaking." However, in this context it is a word "spoken" by Jesus Christ in a supernatural realm. Nevertheless, this phrase appears in the Scriptures and should have some understandable significance. As Colin Brown expresses it, "Religious language represents a kind of model which is not identical with God, because of course it operates on the human level . . . by understanding it the mind is enabled to grasp something of the reality which it represents. Thus, by grasping the words and images of the revelation one is able to perceive something of the reality of God himself."<sup>2</sup>

In what follows, it is shown that such a literal "word" as required by this Scriptural quotation can be rationally assumed to exist. Moreover, we are actually able to partially describe some of this "word's" properties even though no human being can, at present, read, speak or write such a Divine object. We also give a meaningful answer to a seemingly unanswerable question. Is it possible that a human being can ask a meaningful question that appears to have a meaningful answer and yet the answer cannot be expressed in a humanly comprehensible manner?

## 2. The Method

We assume that the intuitive concept of cosmic or proper time is a foundational background for all developing natural systems. A finite or infinite segment of such time is partitioned into a finite or infinite sequence of absurdly small closed subintervals. (Note: We use the Dedekind definition for the finite and infinite.) For example, consider the length of the "small" intervals to be smaller than  $10$  raised to the negative  $1,000,000,000,000$  power, seconds or some other similar unit of cosmic time. For each such small interval, consider a finitely long logically consistent narrative description for some universe composed of natural systems as well as numerous natural subsystems as they could conceivably appear at the very instant represented by the first end point of the small

time interval. This narrative description for the appearance of this universe of natural systems should be obtained in a logically consistent manner utilizing some fixed dictionary of words formed from some finite alphabet of symbols. The entire narrative description for each such small interval is to be considered an "intuitive readable sentence or word."<sup>3</sup>

With regard to the above narrative description, it need not be completely specific. For certain natural subsystems, the description might be statistical in nature. More importantly for the natural sciences, each such description might include time dependent expressions that relate the appearance of one portion of this universe for a specific small time interval to portions within other descriptions for other distinctly different small time intervals. For regularity, various descriptions might include certain statements that relate to specific first principles. It is also possible to include diagrams, pictures and other visual or audio information within these descriptions by the processes outlined in "event theory."<sup>4</sup> Each of these narrative descriptions will be called a "frozen segment." We also require that each frozen segment carry within itself a statement that gives the numerical name of the first end point of the small time interval the frozen segment purports to describe. Observe that from the above definition it can be concluded that there exist infinitely many frozen segments per small time interval. For this reason we call the set of all frozen segments for a specific small time interval a "totality." Whether or not a humanly selected frozen segment from a totality imparts into the human mind a partial comprehension of how the universe under investigation would "actually" appear when viewed by means of human or machine sensors is not significant to this analysis. All that we need to assume is that there does exist some description from a totality that imparts into the human mind a useful and comprehensible description that is assumed to correlate to a portion of reality. Of course, one of the major purposes of the natural sciences is to produce such narrative descriptions or as they are usually termed *physical paradigms*.

Consider partitioning a one second time interval into  $10$  raised to the positive  $1,000,000,000,000$  power, "small" intervals as previously defined. The entire collection of descriptions composed of one frozen segment from each totality would represent a one second narrative description for the successive stages of the universe under investigation. One can intuitively think of this one second collection of descriptions as a "quantization" of the entire description of a one second portion of this changing universe. Now extending this idea to any cosmic time interval, finite or infinite, we obtain a sequence of narrative descriptions that represent the history of such a universe. Let us call such a sequence a *developmental paradigm*. The last requirement is that all of these word forms, sequences and the like be embedded into the Extended Grundlegend Structure (EGS).<sup>5</sup>

## 3. Divine Deduction

When the developmental paradigms are embedded into the EGS, the mathematician often utilizes various technical expressions in describing their behavior.

However, when a theological interpretation is employed such technical terms as “nonstandard,” “hyper,” “super” or “subtle” are replaced by special translations that relate the structure to theologically meaningful concepts. In what follows, such theological interpretations are utilized whenever they lead to meaningful notions.

The most widely known and most often applied form of human deduction is the classical propositional deduction. This form of deduction can be represented and investigated within the confines of the EGS. When propositional deduction is thus investigated it is discovered that there exists a purely Divine propositional deduction that when restricted to humanly comprehensible word forms is exactly the same as human propositional deduction. The behavior of this Divine propositional deduction is partially describable in a humanly comprehensible language. On the other hand, such deduction has infinitely many properties that cannot be so described. Notwithstanding this difficulty, many interesting results have been obtained and we present the most pertinent.

There exists within the EGS a nonstandard object that can be interpreted as a purely Divine word or unreadable sentence. This word has all of the describable properties of a literal word as previously defined and many properties that do not correspond to a human language. For example, this word behaves from the Divine viewpoint in the same manner as do finitely long human language words even though it is actually infinitely long when human descriptions are utilized. Moreover, it has been determined that this particular Divine word must be composed of at least one purely Divine object from a Divine language. This object cannot be directly translated into a humanly comprehensible word form. The complete Divine word cannot, at present, we believe, be spoken or written down or used in human communication. However, the positive aspects of this Divine word outweigh the necessary lack of knowledge we have as to its internal structure. It so happens that Divine propositional deduction applied to this single Divine word yields in the proper sequential order each and every frozen segment from any developmental paradigm that represents a developing universe. We can assume that each of these frozen segments directly correlates to a real material universe. Indeed, we can include within each frozen segment a correlation statement such as, “The portion of the universe represented by this narrative description exists in reality.”

The basic logical properties of such Divine deduction are not restricted to simply sustaining such a universe by “merely” producing the frozen segments. Certain aspects of how Divine deduction could actually produce such a universe can also be investigated. It has been established that Divine propositional deduction could actually yield such a universe in a supercontinuous or superuniform manner.<sup>6</sup> The notion of supercontinuity can only be conceptually comprehended.<sup>7</sup> It is enough to state that from a mathematical viewpoint supercontinuity is considerably stronger than the continuity that is studied in a first course of Calculus. Superuniformity is beyond any of the ordinary types of uniformity employed throughout science that yield descriptions for the regu-

lar or ordered behavior of natural systems. It is more uniform than anything that the human mind has previously either perceived or conceived. It is a startling beauty that is only enhanced by further investigation.

Research has now shown that there mathematically exists a background or substratum Divine structure that not only includes this Divine deduction but also “pastes together” each and every adjacent frozen segment in a supercontinuous superuniform Divine manner even though there may be no humanly expressible or standard method that could produce such a correlation between adjacent frozen segments. Intuitively, one could describe this as a superuniform supernatural gluing process that is only perceivable when viewed from the Divine world. Even if a humanly perceivable gluing process exists, there still will exist this superuniform supernatural gluing process.

Since we constructed developmental paradigms by selecting frozen segments from each and every totality, then there may be infinitely many distinctly different developmental paradigms describing infinitely many different universes. This possibility leads to an important question. Is there a describable mechanism that yields the selection of a unique developmental paradigm that represents *our* universe?

One of the major procedures that humans employ in order to create a formal deduction is a finite choice *process*. In formal deduction we are given certain finite sets of words or formulas called logical schema. Further, we are given a finite collection of such schemas. The rules for establishing a formal deduction allow us to select finitely many words from each logical schema. However, no specific set of rules are given that determine which words are to be selected from the schema. The choice is intuitive and buried within the confines of our mental apparatus and, indeed, every individual could select different sets of words and still arrive at the same deductive conclusion. Hence, we do not and probably cannot explain in a more fundamental manner the mental mechanism that yields our selections when such a process as predicate deduction is considered. Throughout mathematics a finite choice process is always allowed. When facts such as these are investigated, it is established that there are acceptable Divine choice processes that yield infinite developmental paradigms and it is rational to assume that each frozen segment contained in such paradigms is either humanly comprehensible or is not humanly comprehensible. As in the human case, it follows that it is rational to assume that these Divine choice processes do not have any humanly expressible rules that guide the selection of specific developmental paradigms. Intuitively, it is rational to assume that these paradigms are selected by a superintuitive Divine mechanism. However, there is an additional possibility that is not present when human deduction is considered. It is rational to assume that there are specific sets of rules for the selection of specific developmental paradigms where the rules are described in a purely Divine language.

Throughout the Scriptures we have the phrase “. . . and God said, . . .” as well as other similar expressions. In these cases, the actual Hebrew word is *amar*, which is the ordinary Hebrew word for “said.” We are told that the sense of this word in many instances implies

that when God "speaks" there is a direct correlation between the "spoken" statement and the formation of material objects. "Often, however, there is a much fuller sense where God's saying effects the thing spoken (cf. Gen. 1)."<sup>8</sup> Human beings partake in a similar experience, but of course on a more trivial level. We first think about something, usually in mental words and images, and then after we have thought about it, we then can use the materials that are present in our environment to actually construct objects that apparently did not exist within our environment. Thus human logical deduction is translated into material objects. This leads, in a very interesting manner, to a rational interpretation within the Divine world. *It is rational to assume that the creation and development of every natural system perceived by the human being is produced by Divine deduction and is thus a product of a partially describable "supermind."* As previously indicated, a mechanism for such supernatural creation need not be humanly describable or comprehensible.

#### 4. Rationality

The most important aspect of this search for a "word" that actually fulfills the requirements of Hebrews 1:3 has not as yet been completely stated. The entire description for the "word" and the properties of Divine deduction that have been partially explained are simple translations from an abstract mathematical structure—a structure that is obtained from the most consistent collection of deduced expressions known to the human mind. Thus Hebrews 1:3 is a *highly ra-*

*tional* statement and is not a meaningless combination of symbols. The questions asked at the beginning of this article do have rational, albeit partial, answers. Then also there are consistent questions that human beings can ask that need not have humanly comprehensible answers, but it may be rationally assumed that they do have answers. We all believe that complete answers will be forthcoming during a future portion of our developing universe. Paraphrasing Paul's statement, "We now see through a glass, darkly; then we shall see face to face. Now we know in part; but when that time comes; then we shall know fully, even as we are fully known."

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## PANORAMA OF SCIENCE

### The Age of Oil and Gas

Normally oil and gas are contained in a porous and permeable rock like sandstone or limestone, which is sealed by an impermeable rock like shale. Fluids can travel easily through the porous and permeable rock but have a great difficulty traveling through an impermeable rock. It is this property of shale and a few other rocks which enable oil and gas to be trapped in the subsurface. Conventional views on the origin of oil and gas postulate that tens or hundreds of millions of years have elapsed since the hydrocarbons were emplaced in the trap.

However, several facts imply that hydrocarbon deposits are far younger than conventional views would allow. First, in the case of natural gas, in spite of the fact that gas has considerable difficulty in traveling through shale, it can travel. A recent study<sup>1</sup> showed that methane, the primary component of natural gas, can escape through a 400 meter shale cap with a half-life of 4.5 million years. This would mean the complete depletion of a gas field in only 45 million years. Laythaeuser *et al.*, remark,

Based on the above calculated rate of destruction of commercial-size gas fields, the concept is proposed that gas accumulations in the subsurface have only a limited life in terms of geologic time scales. If this is true, known gas fields in older strata like lower Paleozoic reservoirs can be explained only by assumption of a relatively young accumulation age or by the assumption of a much longer duration of the hydrocarbon generation process than currently accepted.<sup>2</sup>

A second indicator of youth concerns the pressure observed in many reservoirs. Normally the pressure of fluids found in rocks is simply equal to the weight of the overlying rock. However, under certain conditions, e.g., due to rapid deposition of more strata, or due to the folding of the strata, the pressure within an oil reservoir may be greater than that caused by the overlying rock. It is in cases like this that oil wells will produce "gushers," such as the one at Spindletop, (see the front cover) if the flow is not controlled. These cases of higher than normal pressure will dissipate due