Observable Evidence for General Intelligent Design (GID).

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Abstract: Relative to the principles of modern physical science, the observed and predictable behavior of each physical-system within our universe is shown to correspond to GID intelligent agency. This correspondence yields vastly more evidence for GID intelligent agency than that which exists for human macroevolution and many accepted aspects of both physical cosmology and quantum theory.

Glossary.

Various defined entities also have mathematically predicted higher forms, often denoted by a *, or the term "higher" or "hyper" or "ultra." The generally defined notions of GID-design, GID-intelligence, among others, includes these predicted higher-forms. This glossary is presented in the hopes that the GID terms employed are fully understood.

Developmental Paradigm. Using a general language, this is a double sequence of general descriptions, diagrams, reproducible sensory information, as well as images that depict the moment-to-moment behavior of physical-systems. It corresponds in a one-to-one manner to the actual "physical events" being depicted.

Directly Observed. Perceived. In a general sense, the term "observed" means detection by means of human sensory impressions. Depending upon what is stated, observed also includes human sensory observations of diagrams and images. However, accept for the "machine recordable data," this need not be considered a particularly trusted method within a "hard" physical science such as physics. Thus, a strict scientific definition is that directly observed data correspond to machine recordable information. Today, this includes methods that reproduce our major sensory impressions.

The "meanings" for human and machine sensory information are filtered through mental biases. If a machine is allowed to faithfully reproduce and record human sensory information and additional information only the machine can record, then the "interpretation" of such data is also related to an individual's training and biases. Of course, even a machine is subject to human biases relative to what it is actually "allowed" to record. In all cases, the interpretations of pure human and machine sensory data is controlled by the language, theories and biases of a particular group of individuals.

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For modern predictive science, the language used to interpret data requires that it be restricted to that which is considered as unambiguous for the group members. The language usually allows for classical deduction. Each group member needs to have the same "intuitive" comprehension as to the meanings mentally assigned to the expressions employed. In what follows, when the term perceived is used, one may substitute the more conservative term observed. Observation does not include imagined entities of any type.

Evidence. In this article, "evidence" comprises interpreted observations that satisfy a statement. This means that when the interpreted data is logically inserted into a statement, then that statement is "true" (is satisfied) for the interpreted data. Thus, evidence is related to something else to which it refers. It is evidence "for something." However, it is important to note that this is also a group concept. Accepted observations can have different interpretations and satisfy different statements. Technically, future interpretations cannot be linguistically ruled out. Thus, from a linguistic viewpoint, evidence need not indicate an absolute truth. There are other less strict notions that are termed as "evidence." These forms of evidence are indirect in character and as such are much less convincing.

Finite Consequence Operator. Such an operator is applied to a specific **language** L. When it is applied to a collection of L members, it produces a single collection of L members. This operator also has a set of characteristics that model the most basic aspects of human deductive thought and it is equivalent to a general logic-system. Hence, as GID-model interpreted, these characteristics signify that the operator represents intelligent actions.

General Description GGU-model descriptions are combinations of symbol strings, and diagrams. These are the major contributions. However, they can also include images or other devices that when considered by an individual yield mental or sensory impressions. This can also include machine duplicating sensory impressions. Thus, in general, an individual's mental or sensory impressions leads to the formation of a description. A description is intended to evoke within the same individual and others the same mental or sensory impression that originally produced the description. For the GGU-model, a description needs to be considered as a general language linguistic **representation** for a design or pre-design. In particular, for our universe, a general description is a representation for physical-events, physical-like events or other events. Such events are considered as the observed or unobservable "real" entities or behavior being depicted by the descriptions. However, GGU-model descriptions are often general in character since the GGU-model is a cosmogony that needs to produce various types of universes. There are predicted objects that behave like descriptions and we can have no detailed knowledge as to their composition. Each general description can also be represented as a set of descriptions. For the GGU-model, a description can be represented by single constructed entity termed a "word."

Descriptions first represent tangible objects that can be observed and that provide the specific information that characterizes a physical-system. This includes all observed values taken from measuring instruments. The collection of objects that yield the set of all descriptions is termed a "general language." When the term "language" is used it refers to a general language. When descriptions directly correspond to science-community defined physical reality, then such a reality is composed of physical-events. The modifier "physical" is often understood. Modern science also describes not observable entities and processes, which can be either real or merely imaginary. *As an analogue model such descriptions can also be included.*

General Logic-System. This is a set-theoretic defined entity employing general language elements. For a full definition, see reference Herrmann, (2006).

GID-design. GID-design is a form of atemporal "pre-design." When contextually understood, the prefix "GID" is often omitted. GID-design is *represented* by rational general language descriptions. The term "rational" indicates that the descriptions are produced by rules for rational thought as descriptively defined. That is, GID-design refers to a descriptions rational structure. The logic applied is most often classical logic. However, other logical formations via the logic-system and the logic-system algorithm are also allowed. When an entity is "named" within such a description, then that name represents the collection of all of the known constituents, such as the known physical-systems, that are contained within the entity.

Via the developmental paradigm, each sequential slice of a universe, a universe-wide frozen-frame (UWFF) is composed of physical-systems. The GGU-model predicts *UWFFs, which can contain physical-like systems or other types of systems. GID-design also refers to such additional predicted forms of pre-design as represented by the predicted higher-language and higher forms of rational thought. Further, GID-design includes any described alterations in the configurations that may occur from one *UWFF to another sequentially occurring *UWFF. That is, by comparison, the alterations are considered as GID-designed. Various alterations, relative the UWFFs, may be predictable via described physical laws.

There are other "designed" entities that are external to the design notion as applied to a UWFF. Such designs are based upon methods of describing physical processes and physical laws. For example, various "substratum processes."

For GID, the second form of design means the arrangements of the physical entities that correspond to the various patterns being depicted, the natural patterns, or the patterns that satisfy physical laws or processes. Hence, it is this "design" concept that is being depicted by the general language descriptions.

GID-intelligence. GID-intelligence is composed of the predicted higher-intelligence and, when restricted to the physical universes, the basic human intelligent actions upon which the higher-intelligence predictions are based. Hence, when stated,

these two types of intelligence are considered differentiated one from the other either explicitly or implicitly. Basic intelligent actions are represented by the application of the stated rules for rational thought as such applications are explicitly or implicitly applied to members of a general language. Higher-intelligent actions are predicted from basic intelligent actions.

Human beings learn by experience or education physical "cases and effect" actions. A specific physical action leads most probably to a specific physical result. It is due to the acquiring of such knowledge that we can function within our physical world. We mentally consider an action, and apply the action believing that a desired effect will be produced. A simple linguistic model for this is the "rule of attachment" as it is called in elementary textbooks. In terms of the basic logic-system algorithm and corresponding consequence operator properties, the rule of detachment (modus ponens) is modeled and is what is used as the foundation for GID-intelligence. Intelligence so defined has a comparative numerical measure.

Measurable GID-intelligence, relative to the UWFFs, refers specifically to the defined logic-system algorithm that deductively yields the sequentially intertwined physical-system descriptions for each UWFF and the sequentially presented collection of UWFFs descriptions. Other described behavior that, in general, exhibits deduction such as physical laws and the physical law alterations of physical-systems, also satisfy this intelligence definition via any appropriate form of the general logic-system and the logic-system algorithm. General logic-system deductions are equivalent to those produced by corresponding consequence operators.

In general, GID-intelligence is not dependent upon the content of a physical law and no descriptive physical law need actually exist that satisfies such descriptive behavior. GID-intelligence also includes application of the rational rules that yield the descriptions. Further, it corresponds to the intelligence necessary to describe physical-systems and their relations one-to-another via a general language. The notion of choice is also a necessary component and there are other rules for rational thought. One can accept these as additional GID-intelligence features but, except for major aspects of the choice notion, these "intelligence" facets are not mathematically modeled. Most accepted quantum physics entities are not directly observable. Observations predicted from these assumed entities yield **indirect** evidence for their exitance. The "higher" intelligence aspects of the GID-model are established via indirect evidence.

A second form of GID-intelligence is application of a rule that requires a specific count to be made. GID-intelligence is measurable.

Indirect Observation. This term is used to indicate that evidence is for something that "can be" directly observed. Observation within physical science and concepts within the Philosophy of Science should, but often do not, differentiate between these

two types of observations - observations that "can be" or "have been" made. The problem is with the definition of "can be." This is often merely a rather unjustified hypothesis and tends to be a matter of opinion. Under various described scenarios, it was stated that the farside of the Moon, the surface of Venus and the details of the surface of Pluto are indirectly observable. Well after such pronouncements, these three surfaces were directly observed justifying the claims. Unless otherwise indicated, in this article, the term "observation" means direct observation.

Logic-system = General Logic-System.

Operator. Within much of physical science, an operator is, usually, a symbolic representation for physical processes - a physical process operator. Such operators have additional properties that are represented by rules for symbol manipulation. For the *General Grand Unification Model* (GGU-model), the term operator has a much broader definition. It includes operators that represent substratum processes. When applicable, an operator is also a mathematical object represented by a set of ordered pairs (a,b), where the set does not contain distinct ordered pairs of the form (a,b) and (a,c). What this means is that a specific "a" corresponds to only one "b."

Physical-like. Physical entities and behaviors are characterized via language elements. Similar language elements are used to characterized physical-like entities and behavior. However, these entities and behavior, although similar to the physical, also have properties that the physical cannot have, or have some property or entity that, at the least, is not part of a defined physical environment.

Predictable. Physical-system behavior is descriptively predictable if it is rationally predictable via the accepted rules for rational thought, which include specific logic-systems and the logic-system deduction algorithm. For our universe, the major but not the only such logic-system is one that is equivalent to classical logic.

A Signature. A signature is a collection of described characteristics that indicates that an entity has produced an event even if that entity is no longer present or cannot be directly observed.

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1. Introduction.

The following is an in-depth article that does not include the specialized mathematics or the required theorems that establish the presented results. GID-intelligent design is **not** dependent upon any describable application of physical laws that a universe might satisfy as it develops. The complete GGU-model, which includes GID and substratum GGU-model mechanisms, solves the General Grand Unification Problem. One requirement is that how our universe comes into being should govern the structure of physics. That is, the physical laws we can described, for our specific universe, will emerge from the "construction." But, on the other hand, no such laws need to exist for other possible universes. Thus, if there are such physical laws, then they are an

additional feature. Since the GGU-model is a cosmogony, the language employed to discuss the GID-model interpretation is rather general. That is, except for a specific universe such as ours, specific designs are not detailed. They are but relationally and generally described.

This article is concerned with **observable** behavior that is direct or indirect evidence that verifies certain aspects of GID-intelligent design. The GID-model is a mathematical model based upon certain specific human linguistic experiences. Actual physical evidence is described that verifies a major facet of the GID-model, when it is restricted to our material universe, evidence that can, but need not, be employed to predict the behavior of an "higher-intelligence." (In this article, the actual technical prefix "hyper" is usually not employed. The term "higher" or "ultra" is substituted for it. When applied to a well-known term, the "hyper," "ultra" or "higher" concept can often be compare to the properties of the term to which it is applied. In all cases mentioned within this article, the term can be so compared. For example, the higher-intelligence employs "ultrawords," which linguistically are modeled by "infinitely long" strings of symbols.)

Unless otherwise indicated, whenever the term "intelligence" or "intelligent agency" (actions) is employed it refers to GID-intelligence as defined above.

After constructing the major part of the GGU-model and the GID interpretation, I discovered the following two remarks.

Hermann Weyl wrote

> Is it conceivable that immaterial factors having the nature of images, ideas, (or) "building plans" also intervene in the evolution of the world as a whole?

Then Noble Laurent Louis deBroglie wrote

> [T]he structure of the universe has something in common with the workings of the human mind.

The answer to Weyl's question is yes and the deBroglie statement can be fully justified. Physical science substitutes language descriptions for physical events (the actual material or behavior being depicted). Language descriptions can be further represented by images, and drawings. Today, language descriptions or images are translated into computer languages and the computer displays corresponding images that represent the language descriptions, and, hence, the physical world. The GGU-model uses mathematically defined operators that represent processes that produce physical entities and behavior. These operators are defined on an abstraction of the notion of a general language.

When "logical" arguments are analyzed, each member of a science-community is required to display their deductions using the science-community's specified logical-patterns. The basic GID-model idea is that each operator has a specific signature that

characterizes the intelligence of the designer of the corresponding processes as well as a signature that implies, when an operator is applied, that a specific process is used that corresponds exactly to the intelligence necessary to infer behavior.

It should be self-evident, that assigning intellect agency to the GGU-model operators is an hypothesis that needs verification. Thus, one needs to show that each known physical process exhibits an "intelligent design" signature. Explicitly stating this signature would be direct evidence for the acceptance of this hypothesis. Displaying this human-like common feature satisfies the deBroglie statement and incorporates how we use building plans to construct. The existence of an high-intelligence is predicted and this prediction is verified by indirect evidence. Indirect evidence is used throughout physical science for objects that cannot be directly observed. Various science-communities accept such entities as physically real. But, most positivists only accept such unobservables as imaginary constructs.

> Indirect evidence for "something" (indirectly verified) means that neither a human nor machine sensor can, often by definition, detect the actual "something." The "something" is hypothesized or, in the GID-model case, predicted. The concept is entirely based upon logical deduction that yields observable predictions. Due to the possibility that other hypothesized "somethings" lead to the same observable predictions, indirect evidence is never absolute.

The "existence" of almost all assumed subatomic objects and processes comes from indirect evidence. One can accept their existence based upon how they are predicted to affect observable gross material. The same philosophy of science holds and, hence, should be allowed for the notion of an higher-intelligence. (An additional discussion on indirect evidence can be found in section 8.)

One has for quantum physics that

Assumed unobservable behavior rationally produces observable physical behavior.

For the complete GGU-model, one has that

Observed behavior rationally implies higher-intelligence actions that rationally produce all observed physical behavior.

It is important to realize that the direct evidence for intelligent design and indirect evidence for design by a described higher-intelligence, as presented here, is not dependent upon accepting any GGU-model generated cosmology. However, at least for our universe, GID-intelligent design, in observable restricted form, satisfies rationally perceived and predicted physical behavior. The properties of a higher-intelligence are predicted, and there is a vast amount of indirect evidence exhibited by its "restricted form" direct evidence. The notion of the "restricted form" always means human intelligent actions exhibited by application of the rules of rational thought.

The basic requirements for the GGU-model is that a specific set of defined operators are applied and these produce and continually sustain the development of a universe. These operators satisfy empirical evidence. For this article, the GID-model interpretation is analyzed relative to such evidence. As discussed here, this is not a complete analysis. Empirical evidence, for intelligent design, is (1) each of the GGU-model operators is intelligently described. That is, *in restricted form, they specifically describe observable modes of human behavior that exhibit deductive thought.* Then a mathematical model for these operators rationally predicts corresponding descriptions that give additional comparative information as to the behavior of an higher-form of intelligent agency. This higher-form of intelligent action needs only to refer to the rationality of various substratum concepts.

(2) Each physical-system, its behavioral patterns, at each moment in a development and the ordered moment-to-moment developmental of a universe are produced by intelligent actions that yield designs. For (1) and (2), the originally described "intelligence" being displayed predicts the existence of an higher-intelligence that satisfies such characterizing statements.

Statement (1) is satisfied since each of the defined operators is modeled after processes that mimic a fixed set of human actions, where each action requires human intelligence to perform. The operators are designed by an intelligent being denoted by H as described in Herrmann (2002). Each of the operators used for all aspects of the GGU-model universe generating behavior has specifically describable characteristics that mimic human modes of deduction. The operators also mimic other mental processes and modes of human activity. These operators are discussed elsewhere. (See Special References.) Hence, (1) is satisfied.

Empirical evidence supports the use of mathematics and the classical logic it employs as a valid predictor for future physical behavior. However, in general, the mathematics tends to produce what is classified as extraneous results and, in other cases, for example General Relativity, results that are not accepted as applicable to our physical universe. Thus, although mathematics is the most rational form of predictor used throughout physical science, it need not be considered as an absolute mode by which factual predictions are made.

I do not contend that a predicted higher-intelligence exterior to our universe actually performs various described tasks in the manner here presented. I only contend that the higher-intelligent actions have a remarkable rational structure as behaviorally represented by the GID-model.

The major purpose of this article is to establish the circumstances under which (2) is fact. These are discussed within following sections: 2. Physical-systems, 3. Physical Laws, 4. Scientific Theories, 5. General Applications of physical Law Statements and Scientific Theories, 6. More about Evidence, 7. Illusion, 8. Direct or Indirect Evidence

and Nature, 9. (A link to) The Fundamental Universe-Generating Processes.

2. Physical-systems.

> ******The complete GGU-model employs the exact method used within modern physical science. General descriptions correspond to physical entities -the physical events - that the descriptions depict.*

GID-intelligence is directly displayed, **in restriction form**, by logical-deduction as written in a step-by-step display using a specific language as its elements. Except as indicted below, the elements describe physical-systems. (The GID-model is not dependent upon physical laws. These yield but an addition feature.)

The following observation is made. (I) *The ball rolls off a three-foot high table. It falls one-foot. It falls two-feet. It falls three-feet and stricks the floor.* This description yields design of the first type. Consider the **written form** (II) **The ball rolls off a three-foot high table. If the ball rolls off a three-foot high table, then it falls one-foot. If it falls one-foot, then it falls two-feet. If it falls two-feet, then it falls three-feet and stricks the floor.** Standard deduction, the rule of detachment (modus ponens), is applied to (II). This yields as "deductive conclusions" the exact same ordered statements as (I). But, this behavioral description does not include any so-called physical laws as a predictor. "Deduction," as here applied, is relative to general linguistic descriptions.

In the following, I use symbols for the natural numbers. Let each of the following symbols F(1), F(2), F(3), F(4), . . . , F(n) represent "any" general language expression. Then, in general, a finite "cause and effect" pattern can be informally expressed as (III) W = F(0). If F(0), then F(1). If F(1), then F(2). . . . , then F(n).

General GID-intelligence is dependent upon one aspect of the intelligence used by the human being. This simple deduction is applied to expressions of type (III). This is the most basic form of propositional deduction "A" - "modus ponens" - the rule of detachment. This rationally yields A(W) = F(0), F(1), F(2), . . . , F(n) *in the exact left-to-right step-by-step order indicated*. Each of the "F"s is considered as a general descriptions for a cross-section of our universe at a moment in "observe-time" - a universe-wide frozen-frame (UWFF). However, each of the UWFF is composed of designed intertwined physical-systems. It's here that a slightly more complex symbolism is needed for each UWFF.

For a given UWFF F(k), members of a described finite collection of physical-systems are denoted by the symbols F(k,0), F(k,1), F(k,2), . . . , F(k,n). This collection is informally expressed as in (III). F(k,0), If F(k,0), then F(k,1). If F(k,1), then F(k,2), . . . , then F(k,n). The same rational process is applied to this expression for the UWFF and each designed physical-system description F(k,0), F(k,1), F(k,2), . . . , F(k,n) is deduced in the indicated order. Each "deduced" UWFF has a

similar physical-system structure. These patterns and the deductive process used are mathematically modeled and this mathematics is not presented in this article.

[[When embedded into the mathematical model, the symbolic forms *F(k,0), *F(k,1), *F(k,2), . . . are predicted. (The . . . now denotes, at least, a continuation over the entire set of natural numbers.) Each *F(k,m) contains F(k,m). Each F(k,m) corresponds to a physical-event E(k,n). Each *F(k,m) corresponds to a physical-like event that can have interesting additional properties.]]

Minimally, the substratum GGU-model mechanisms that change the general descriptions into the actual physical-events employ the same deductive procedures. These mechanisms are not discussed in this article. As a universe progresses in its observer-time development, what we directly observe are mostly alterations in the actual physical events, and these correspond to the appropriate general descriptions. Measurable GID-intelligence is concerned with the rational structure of the development of a universe and such alterations as displayed by the second form of design. Due to the participator requirement, necessarily, all such physical-systems are also considered to be pre-designed. (NOTE. When it is contextually understood, the prefix "GID" is often dropped.)

If observed predicted or merely observed behavior corresponds to the actual physical-events as they are rationally produced from such general linguistic forms, then, in restricted form, this is **direct evidence** *for GID-intelligence and, in particular, for the natural designs being depicted by the descriptions.* I mention again, that all such "direct evidence" is indirect evidence for the "higher" form of GID-intelligent design.*****

3. Physical Laws (Laws of Nature).

First note again that, in general, GID-intelligent design is NOT dependent upon any descriptive physical law or predictive physical theory. However, it is rather remarkable that, for our universe, such design does satisfy such descriptive statements. This section is relative to those cases where physical law statements exist that predict observed physical entities or behavior.

How does the dictionary define a law of nature - a physical law? My dictionary states that a "law of nature" is "(a) a cause and effect sequence of events in nature or human activities that has been observed to occur with unvarying uniformity under the same conditions or (b) the formation in words of such a sequence." For the GID-model, using a physical law statement (b), rational processes are applied to obtain representations for the (a) cause and effect(s).

As demonstrated below, a physical law statement (b) is an intelligently designed aspect of the general GGU-model and rational processes lead to (a) and to data verification. For our universe, (b) satisfies the designed sequential alterations, if any, in the UWFFs. *I mention again that such a design feature is an additional aspect of the*

GID-model. Hypothesized physical law statements that do not allow one to test the required unvarying uniformity of what may or may not be accepted as physical laws. Even if testing is possible over a specific interval of observer time, there is no scientific way that absolutely determines that the physical law will remain unvarying and uniform during a "future" time period. Moreover, some science-communities may require a physical law statement to be tested in a specific way. It is not relevant to this article how one obtains verifying physical law data and whether data exist prior to or after the physical law statement is discovered.

> The descriptive terms in a physical law are either observationally or simply assumed to correspond to the physical events they describe. **There are no such descriptions of any type within "nature" itself. These are ALL human constructs.** The most basic form of physical law deduction is exactly that displayed by deduction patterns. Let A and B be descriptions. Then one accepts as fact that IF A occurs, then B occurs. The word "occurs" is altered relative to the physical law. So, let A occur. Then B occurs. As mentioned, this descriptive form is called the rule of "modus ponens" or the "rule of detachment." **Although to perform the simplest human tasks such deduction must take place, such deduction is generally <u>modeled</u> relative to general linguistic forms.**

(I) *The existence of the collection of all described physical law statements indicates that our universe is designed in a special manner.* This is, human intelligence can devise physical law statements using languages and other devices that mimic processes that appear to produce or alter physical-system behavior, or produce or alter physical-system characteristics. For science, these yield comprehensible "cause and effect" statements. These regulations are used to build our man-made universe or to predict behavior.

(II) (a) A physical law statement is construction in such a manner that basic logical processes can be applied. In order to verify experimental data or predict experimental data, a physical law statement requires application of a logic-system. The statement itself most be designed in a form applicable to the logic-system employed. (b) *If* some pure data is used to determine directly physical behavior without requiring additional assumptions, then such data need not be modeled by GID. Such data can falsify aspects of the GID-model. There are mathematical examples of possible data that do falsify these aspects (Herrmann (2002, p. 73, Empirical). For example, this occurs if two possible physical law logic-systems are combined in a simple manner, a manner that yields results that cannot be obtained from a required combined logic-system. Thus far, no such falsification has occurred.

(III) The production of or alterations in the behavior of a physical-system, or the production of or alterations in a physical-system's characteristics produced by application of a physical law statement are satisfied by the step-by-step GGU-model

development of our universe. *That is, they satisfy the rationally obtained predictions stemming from physical laws and, hence, restricted higher intelligence actions.*

(IV) The GGU-model is a cosmogony. It is capable of producing every described cosmology and infinite many other ones. The production of or alterations in the behavior of a comprehensible physical-system is **not** the result of application of a physical law or physical theory. By (III), the construction of the GGU-model implies that these regulations are satisfied in that their predictions are satisfied.

Physical laws can, but need not, be deductively obtained or "guessed at" through a process of deductively comparing data. From a very ideal viewpoint, where no additional factors are considered, in 1632, Galileo deductively argued for a physical law. He needed to us the geometric method of the time, the Merton Rule, where the numerical value for distance was actually an area. Algebraic manipulations, if known, were not allowed. Today, this derivation would be rejected based on unit analysis.

When one drops a body, he deduced "that the distance passed by the body departing from its rest are to each other in double proportion of the times in which those distances are measured." This completely over-turned the "Law of Fall" of Aristotle, which, by the way, was contradicted by observation for more than 2000 years. Aristotle's law implies, under similar conditions, that a "heaver" body will fall further than a similar lighter one if they are both dropped at the some time from the same position. Galileo's result states that the "weight" has no influence upon the distance an object falls. Today we let the constant of proportionality be (1/2)g. Hence, symbolically the measure $s = (1/2)gt^2$.

The following illustration is presented in various articles and is similar to the one illustrated above. Consider a DVD, which records the appearance of a rubber ball that rolls off the top of a tall table and drops to the ground. There is a measuring rod affixed to the table that "measures" the ball's distance from the top of the table to the ground as it falls under the influence of gravity. As it begins its fall, pause the DVD player. The image displayed on the monitor appears fixed. Now forward the display one frame at a time. From our observation, the ball appears in slightly different places in each frame. Correspond the lapsed "time" to the number of frames observed. There is no law of gravity, there is no gravitational force "pulling down" on the rock. (Necessarily, this is how any GGU-model scheme produces this "designed" behavior. It does not, somehow-or-other, employ a physical law to do so.)

Now, for this locally observed experiment, we apply Galileo's law that the distance moved, s, is proportional to the lapsed time squared. So, this allows us to calculate the distance, s, if we only know the frame number. This calculation is in good agreement with the numbers on the measuring rod. Thus, data verifies the Galileo law. If we just had the data, then maybe we could, after some effort at back-and-forth deduction, have guessed at the relation. (Of course, as known today, the law is actually rather

more complex than this.)

Then using Newton's notions, we can "deduce" the "instantaneous" speed, ds/dt = gt. At least, relative speed is a describable physical event when one says "See how it picks up speed after you drop it."

> In these cases, human mental deductions are applied. So, remarkably this implies that this purely physical behavior is produced in such a manner that "we" can rationally deduce expressions and make calculations. We have directly observed behavior that can be attributed to intelligent actions. The actions being our applications of deductive logic. But these lead to the cause and effect statements that "Nature" duplicates as one states it in a Feynman type language as quoted below. Indeed, the descriptions we use depict patterns within "Nature."
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> So, due to deductive predictions from such physical laws, deductive intelligence is being displayed, by "Nature," via these patterns. (Additionally, using the GGU-model schemes, one can conclude that the step-by-step behavior so observed has been especially and intelligently predesigned so as to allow for such rational predictions.) For the GGU-model and a small "time" interval, the number of frames is so vast that even if one assumes the behavior is "continuous," the values for any comprehensible measure could not detect that the behavior is actually sequential.

The term "physical law" (law of nature) can also refer to human activities. These include such things as economic laws, among others, that are not usually considered as physical laws. Physical laws tend to have the most concrete defining properties. In this section, the term "physical law" refers explicitly to a physical regulation and possibly other accepted types of "physical laws" that fit the physical circumstances.

> A (humanly) comprehensible physical law starts as a "statement" that can be logically applied more than once to physical situations. But, this does not mean that such a law is actually applied more than once. The statement comes from a language as defined in this article. As above, the statement is considered as rather "simple" and is often used within more complex scientific theories. And as noted, such a law predicts, via application of a general logic-system, a science-community's experimental data. Also note that such laws can be represented by language elements other than written strings of symbols.

Recall that a science-community is any individual or organization that, at least, uses an implicit or explicit fixed general logic-system. Hence, a meaning for the term "science" can be rather broad in character. "Science" can refer to any branch of systemize knowledge that includes a fixed general logic-system. If one uses terminology contained in Herrmann (2002), then physical law statements can include descriptions

for how we comprehend the combining of various "simple" levels of the universe-wide frozen-frames (UWFF), the sequential slices.

The history of how physical law statements are obtained clearly indicates that all have developed through human mental procedures that, for recent history, include the notion of mathematical abstraction. They are, at the least, intelligently designed by us. Relative to a law being developed merely from observed data, "intuition" can be considered as a first step. Such intuition is based upon human mental processes that yield directly an hypothesis that states that there is a correlation between observed physical events.

"It is a perception of relations and not subject to any rules of validity, and represents the gropings and tentative guessing of a mind aiming at knowledge." (Cohen and Nagel, "An Introduction to Logic and the Scientific Method, Harcourt, Brace, NY (1934, P. 275).) However, these "gropings" use mental processes and often use back-and-forth deductive refinements that yield an improved correspondence between a physical law statement and data. The first step for such intuition does fit the "finite choice operator" as GID-model interpreted. When only empirical data are being considered, then an hypothesized physical law statement must satisfy the data. That is, the correlation is tested. Verification establishes a correlation between data and the purposed law and requires a logic-system. (The logic-systems used in this article have a slightly more technical name. They are the general logic-systems.)

It is a fact that any data determined physical law statement must satisfy the requirements for a logic-system if that physical law statement is used within any science-community theory. This follows since such a theory must predict the original empirically obtained data from which the physical law statement is obtained when restricted to appropriate objects. Such empirical data often represent information that requires interpretation (i.e. translation). This yields a relation between descriptions by considering the "before" and the "after" effects for the physical state-of-affairs investigated.

What is actually accepted as a physical law statement depends upon the science-community. Consider Kepler's Second Law Planetary Motion. He used the orbit of Mars as his one example. He considered the numerical data obtained by observation from the earth and assumes the earth is in a circular orbit about the sun. This data allowed him to consider the Mars path of motion over fixed periods of time. He selected many different assumptions and tried to deduce the data. After much contemplation and calculation Kepler discovered principles that do predict the data. He showed that for any fixed period of time, the line segment from the planet to the sun will sweep out a constant space region area. And, this law satisfies the data. Technically, the geometric configuration predicted is mostly not related to observable physical entities but this numerical result is mentally perceivable. Notice that deduction is an important aspect for determining whether certain statements are candidates for been termed physical laws.

But, in general, if a described physical-system F(k,n), for an observed physical event, is altered in the next UFWW F(k+1,n) for an observed physical-event, then an exceptional amount of deductive thought may be necessary in order to predict F(k+1,n). In restricted form, this is additional direct evidence for GID-intelligent design. Hence, the existence of predictive physical laws yields direct evidence for intelligent agency. (Notice I did not write "higher-intelligence agency" for which it is indirect evidence.) Today, the "theory" or "model" concept is the major approach that allows for a vast increase in verified predictions.

4. Scientific Theories.

For this article, a scientific theory is considered in the broadest sense. It can use more than one physical law as hypotheses or other working hypotheses, where the working hypotheses need not be considered as uncontested physical laws. It is not the purpose of this article to discuss the science-community conditions an hypothesis needs to satisfy before it is declared a physical law.

Technically, a scientific theory is composed of all the statements that are deducible mostly from classical logic. Today, when mathematically modeled via a specific mathematics structure, the hypotheses, technically, include all of the necessary axiomatically deduced structure elements. It is self-evident that a scientific theory is intelligently designed by those who construct the theory since a science-community's logical-system is employed. Then deduced conclusions yield descriptions that "depict" physical behavior or physical entities. Trivially, the behavior or entities are not described by Nature itself. Typically, for entities, one has a physical-system description, a physical theory is rationally applied and an altered physical-system is described.

For the complete GGU-model, there is a correspondence between descriptions for physical-systems and the physical events. It is important to note that since it is a cosmogony and must produce universes that have no describable cause and effect laws, then such "laws," if they exist, are an additional and special feature of a developing universe. Apparently we are the only entities on Earth that construct theories from these laws and predict future behavior that does occur. For this reason and due to application of the participator model, this evidence alone implies pre-design.

(I) (Complete GGU) Event (1) $\Leftrightarrow$ Description (1) Rationally Yields Description (2) $\Leftrightarrow$ Event (2)

Additional Feature Incorporated Within the GID-model.

(II) (Complete GGU) Event (1) $\Leftrightarrow$ Description (1) $\Rightarrow$ Theory Produced
Rational Predictions $\Rightarrow$ Description (2) $\Leftrightarrow$ Event (2)

Basic GID-"intelligence" is restricted to that displayed by measurable rational processes as studied within Mathematical Logic. The above "Description (1) rationally yields Description (2)" appears in actual concrete forms throughout physical science and is directly observable evidence for rational design. This can, but need not be, considered as a restriction of an high-form of intelligence. The notion of the "description" can be but an analogue concept and the "actual" GGU-model entities from which a universe is obtained need not be of this type. But, the entire GID-model is relative to the rationality of the statements presented. From this viewpoint, it is rather trivial to extend the concept of "intelligence" to the descriptions themselves and to philosophic notions such as "purpose." But, these forms of "intelligence" would not be considered, by some, as "scientific" since they are not "measurable" notions. Since this type of "intelligence" is also being displayed by the complete GGU-model, then it should not be rejected since it is a rational consequence of the mathematical model.

The actual rules of logic used by individuals to construct scientific theories may not be explicitly mentioned although, for scientific theories, classical logic is the usual approach. In general, the conclusions can come from either inductive processes through observation and generalization, or from pure general deduction. This can yield informal scientific theories that are intelligently designed by trained individuals. However, when challenged to specify the deductions used for the arguments, a *general rules of inference* must be constructed. It is shown in the articles listed in the Special References that the processes that yield universes are the result of applications of (ultra) logic-systems. Hence, for our universe, the specific physical processes that correspond to each informal scientific theory also correspond to intelligent actions produced by intelligently designed logic-systems. I point out that such logic-systems are not based upon the notion of logical "values" such as two-valued models for "True or False" or any other valuation notation.

5. General Applications of Physical Law Statements and Scientific Theories.

There are, at the least, two ways to show that applications of physical law statements and scientific theories are, for the GID-model, intelligently designed, at least, from the viewpoint of human intelligence. One is my published method to obtain the best possible consequence operator or equivalent general logic-system unification for any set of consequence operators or equivalent general logic-systems, respectively. This result shows that any application, finite or infinite, of physical law statements and scientific theories is equivalent to a single unifying operator or equivalent general logic-system. (See Herrmann, R. A., "General Logic-

Systems and Finite Consequence Operators," Logica Universalis, 1(2006):201-208 or arxiv.org/pdf/math/0512559 General Logic-Systems . . . and Herrmann, R. A., "The best possible unification for any collection of physical theories," Internet. J. Math. and Math. Sci., 17(2004):861-721 Corollary 2.11 p. 864, or arxiv.org/abs/physics/0306147 and http://arxiv.org/abs/math/060357 Theorem 2.2. Then there is the example discussed in the chance.pdf file in raherrmann.com/chance.zip. Statements that describe emergent properties can be found at en.wikipedia.org/wiki/Emergent_properties and are also included within this unification. (Physical entities using informational ultrafast propertons with correlating ultranatural events are compelled to display this properties.)

There may be those who reject any physical law statement or scientific theory that postulates the existence of any unobserved object. This rejection will not eliminate the statement that our universe is intelligently designed.

There is a second approach that is of little significance and it will not be discussed in this article.

6. More on Indirect Evidence and Nature.

Although I have purposely not as yet stated how the "ultra" entities are interpreted, there is one application that answers one significant physical science question. How can individual random production of physical events lead to theory predicted probabilistic behavior. For the GID-model, there exist "pure" ultra-logic-systems that yield individual probabilistically described events. The ID-signatures for these pure ultralogic operators is that of an higher-intelligence and only an higher-intelligence. Thus, by similar rational choice, one can accept, via indirect evidence, that an higher-intelligence produces and controls or designs all such behavior. (See Special References, the Probability Model article.)

Nobel Laurent Richard Feynman stated during his public lectures on QED

> . . . while I am describing to you *how* Nature works, you won't understand *why* Nature works that way (Feynman, p. 10).

But what does he mean by "Nature," which he often refers to as a She? Does he mean the usual dictionary definition or maybe something else? It is the phrase "Nature works that way" that carries additional meaning. Feynman and others have a problem with such terminology. It would be just as sensible to call it "the thing" or a "something." Of course, one is not allowed to substitute God for the term "Nature" and term it as a "He."

The GID-model rationally implies that there is "something" within "Nature" itself that corresponds to intelligent agency. Does this notion of intelligent design model the behavior of an actual entity? I repeat, physical laws are not "stated by Nature." They are human

constructs that remarkably predict observed physical-behavior. How is it possible that assumed impersonal Nature develops from moment-to-moment in such a manner that we can use material that Nature does not itself construct and predict its future behavior?

From a viewpoint of the most fundamental aspects of modern science, the mathematical model, one easily concludes that the linguistic procedures we employ to describe physical-system behavior model "something" that, at the least, is related to human mental behavior. Or as deBroglie wrote "[T]he structure of the universe has something in common with the workings of the human mind." But, what might that "something" be? Do we simply ignore the evidence for a "something" or, as with quantum physics, not allow one to even ask the question?

As illustrated and discussed in this article, GID and GGU-model entities exist as "actual" linguistic constructions and how these constructions can be rationally obtained is a rather trivial fact. These notions are mathematically modeled by a standard mathematical structure. When this standard model is embedded into a nonstandard structure other entities are **predicted** that can be compared with the standard ones. These predicted entities are named with an additional prefix of "higher" or "ultra" such as an higher-language, ultranatural laws, ultra-logic-systems, ultrawords etc. and can be compared with the underlying entities, physical laws, logic-systems, words, etc. This is similar to quantum theory or early history cosmologies where physical objects or processes are accepted based only upon deduction and indirect evidence. (The "higher" and "ultra" prefixes mostly replace the technical prefix "hyper.")

Using a nonstandard model, an higher-language is predicted. The rational generation of a UWFF (a slice of our universe) can be replaced by an hyper-algorithm applied to an "ultraword." The generation of an entire universe can also be modeled by an ultraword. Propertons are described by members of this language. The secular instructions for the formation of physical-systems from propertons is composed of members of this higher-language, members that we can comprehend. Hence, the nonstandard model is a necessary requirement for the secular GGU-model. And there are also the rationally predicted ultranatural systems. These are additional substratum "systems" that behave like physical-systems but are formed by x-tons. Our entire universe at any moment in its development is a physical-system. It is predicted that universe wide ultranatural systems occur as our universe develops. These could be but repetitions of UWFFs, empty systems or "something" entirely different from our physical world. Thus, the nonstandard model has some rather interesting additional features.

Although the GGU-model is falsifiable relative to the logical production of physical behavior, obviously the predicted "ultra" entities or behavior cannot be employed within a physical laboratory setting to produced physical entities or behavior. This

is the same property required of the standard cosmological model. *But, all that has physically existed and now physically exists is indirect evidence for the existence of the GGU-model processes.* It should be noted that this model also avoids the obvious infinite logical regress that occurs when one concludes, for a cosmology, that a physical entity or process is "self-produced."

Via a general language, the GGU-model mechanisms are GID-designed. This description includes some higher-language expressions. Hence, as with physical science in general, all aspects of the *complete* GGU-model are in a descriptive form and these general descriptions correspond to the events and entities being described. *These descriptions and the rational and hyper-rational rules employed form an analogue model for behavior that, most likely, cannot otherwise be comprehended.* From the Biblical viewpoint, this higher-intelligence is an invisible spirit entity. In this case, I cannot describe, in any manner, the composition of this entity and, hence, cannot describe "how" such an entity "actually performs" all of its creationary activities. Indeed, no complete mechanistic description is possible since this would led to another unacceptable infinite regress. However, since the scientific analysis of rationality is based entirely upon linguistic expressions, then a basic goal for the GID-model is achieved. GID-intelligent design and specific Biblically described creationary activities are rational concepts. **The behavior being analogue modeled by the GID-model is verified by a vast amount of indirect evidence.**

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7. Illusion.

In an attempt to eliminate intelligent agency as an actual fact, one often is told that it is "merely an illusion." From observed human linguistic behavior, the GID-model rationally predicts behavior that, by comparison, would be that of an higher-intelligence. This fact does not imply that such an higher-intelligence exists. As with the accepted existence of entities within quantum physics, unobservable entities that are not accepted as mere illusions, the existence of an higher-intelligence is accepted based upon indirect evidence. One can accept this hypothesis based only upon this rationally obtained prediction. Within particle physics, the concept of photon absorption is accepted, by many, for the exact same reason.

There are philosophic attempts to dissuade individuals from accepting this higher-intelligence hypothesis. The argument is that evidence implies only an "apparent" design; it is an illusion, which is not objectively real. Of course, similarly one can be say, for many quantum physics entities such as quantum fields or strings, that their design is illusionary

since the endowed designs are not directly observable. *However, there are strong counter arguments to the claim that GID-intelligent design is illusion.*

In Herrmann (2002), I discuss, beginning on page 178, the notion of apparent design or illusion as stemming from a basic evolutionary explanation, where the claim is that the human brain evolved and displays an "evolution of conscientious." This presupposes that the physical-system behavior comes first. One then argues via the notion of the evolution of human consciousness and corresponding brain development, that from human observations and, distinct from other species, our brain evolved in such a manner that the behavior patterns we observe within the environment developed the mental machinery that has produced linguistic constructions and associated rational thinking. However, I show that this evolutionary argument fails for the notion of mathematical and other forms of abstraction and, hence, fails for the GID-model interpretation. The GGU-model is based entirely upon mathematical abstractions and abstract concepts.

Besides those mentioned in the referenced book, there are additional arguments that this interpretation is not illusion. For example, the logical generation of models that represent physical law statements and scientific theories that predict behavior is a recent development. The creative ability of the human brain to perform this activity is not restricted to specific regions or social environments. Indeed, there have been and there are today many individuals who engage in this creative activity. Individuals observe, and then describe or model physical regulations. Some of these are used to produce technical advancements.

Certain technical advancements are used to describe or model additional physical regulations. Then these regulations are used to produce technical advancements. *It is self-evident that such a human aptitude is required prior to this process.* This ability appears to be rather widespread in character and often a manifestation requires one "to be in the right place and at the right time." This ability is not attributable to a single source and this talent has been displayed over a rather historically short time period. A simple and rational explanation is that this mental ability is a pre-designed aspect of brain activity that displays itself in concert with technical advancements.

The actual indirect evidence for the higher-intelligence that probabilistically "produces" a physical-system or physical-system activities does not correspond exactly to any form of human intelligence. It cannot come from any form of material brain activity that predicts the observed physical-system patterns. This fact comes from the proof of the main theorem in the "Probability Models" paper. This higher-intelligence is NOT an "higher-extension" of any form of modeled human intelligence. No biological object within our universe can apply this general logic-system and obtain any of the stated results.

As pointed out in the first paragraph of my comparison article (See Special References), all claimed direct or indirect RID evidence is, as noted, extended GID evidence. Finally, what follows is a **detailed discussion of a remarkable fact** - a fact that gives further evidence that the GID-model notion of intelligent design is not illusion.

Consider a known and well established set of physical laws, where each set is denote by N(j), and, for each fixed j, there is an i such that $i \neq j$, $N(i) \neq N(j)$. Physical laws are described by ordinary languages, which can include diagrams. "Nature" neither displays such regulations in these forms nor states the physical characteristics that are needed to predict behavior. The N(j) are expressed in a language L(j). Let each N(j) be applied to an observed set of hypotheses X. Then, for each j, using the human brain and a general logic-system, a science-community obtains the set of predictions Y(j). These predictions can be intuitively considered as contained in a "book." Of course, you will not find a logic-system explicitly displayed by "Nature."

Now consider those members of Y(j) that are directly observable. It is a remarkable fact that, when properly restricted to behavior that appears only to be caused by the laws constituents, the observable predictions Y(j) can be verified. Such verification is a recent development. It first seems to begin with Galileo. Moreover, when the members of each Y(j) are compared, there are no contradictory statements. The vast majority of humanity use science-community predictions and they do not produce them via a logic-system. They "trust" the science-communities, which need only contain a single individual, where the community adheres to a scientific method and, via deduction, produces the predictions.

The sets of physical laws can be combined. They can be taken two at a time, three at a time, and so forth, and again predictions can be made. The same consistency should be maintained. This is not, however, the way it is done in practice.

> (A′) Usually, to obtain detailed descriptions for physical-system behavior based upon X, the entire combined collection of predictions Y(j) for X, as j varies, is considered. A collection of books is consulted and the predictions applied to the specific cases where the language corresponds.

Methods (A′) and (A″) below are not only the usual approaches but are the exact way science-community results are combined when many individuals construct portions of our man-made universe or discuss physical predictions. Does the (A′) approach follow the rules for logical deduction?

> (B′) NO, in general. Although each member of a set Y(j), can be considered as produced by a general logic-system and each separately yields rational predictions, the combined set Y(i) of the predictions need not be rationally produced. There are infinitely-many examples of this.

The fact is that it is **not** typical for the (A′) or (A″) below to correspond to predictions that are rationally observed. There is a new significant result, in terms of

general logic-systems, that substantiates the significance of (B′) relative to intelligent design.

It has been established that, in general, to obtain rational combinations of all of deduced predictions Y(j) an immense amount of knowledge is required. (See Special References and article that contains Theorem 2.2.)

> ***(C′) An individual would need to combine ALL the languages and all of the general rules of inference used by each science-community into one general rules of inference and apply the combined general logic-system to X, as well as all the other possible hypotheses, just to get a rational combined-theory and not simply apply the (A′) method.***

Moreover, the (C′) method yields the appropriate unification U for the logic-systems used by the science-communities to obtain each set Y(j). Even if each of the science-communities uses the same general rules of inference, say classical logic, then this does not mean that the (A′) method is equivalent to the (C′) method. Since much physical-system behavior comes about by application of numerous physical laws, then merely using members of Y(j) would not be sufficient to predict accurately much physical behavior. Hence, application of U is the appropriate approach. But, there is such a vast amount of knowledge required to do so, I know of no individual that can accomplish this task.

On page 73 of Herrmann (2002) is an example where the (A′) method does not yield the same result as does the unification of the logic-systems. It is easy to describe the worst-case scenario where the (A′) approach is not equivalent to the unification of all of the physical theories. Consider a language L and assume that two science-communities use classical logic. The first science-community uses its cosmology X(1) and predicts that our universe will continue to expand forever. The second science-community uses its cosmology X(2) and predicts that our universe will cease to expand at a future moment in observer time. Each science community shows that its cosmology is consistent by demonstrating that there are members from L that cannot be deduced from its cosmology. However, even though they both use classical logic when the (C′) combination is considered, the combined cosmology X(1), X(2) will predict each member of L. This is what occurs when two theories yield contradictory statements. That is, the combination is logically inconsistent and cannot differentiate between fact or fiction.

> (A″) In physical practice, the unification is not employed. A <u>few</u> Y(i) are selected based upon the assumed processes that appear to affect the behavior of a physical-system. This yields the actual Y′ used by humankind. These are applied via human mental processes. If these mental processes yield inconsistencies, then there is no meaningful correspondence between observations and a descriptive language. That is, no description could be trusted as specifying a physical fact since the negation of the description

can also be rationally obtained.

Since for (A′) or (A″) the unification is not employed and inconsistencies have not appeared, then this implies that the logic-systems that yield each set Y(i) are rather special. One can conclude that "Nature" or "something" has produced physical behavior in such a way that our formalizable modes of rational thought can describe laws that predict such behavior. And, significantly, this "something" has done so in such a manner that a unification of these laws is consistent and does not alter the predicted results. We are actually employing a small portion of this unification. And, it appears, as yet, no human being has obtained the necessary mental ability to apply the unified logic-system and deduce each member of each of the sets Y(i) and other possible conclusions.

The fact is that the combined sets of physical predictions Y(i) produced from the not necessarily observed sets of physical laws N(i), which we use for experiments, accepted observations and even our everyday activities, are not the result of our applying the unification. Yet, remarkably, this standard practice has not led to inconsistent physical-system behavior. This is exceptionally unusual.

Do our actual mental abilities correspond to our sensory experiences?

> We have the habit of combining certain concepts and conceptual relations (propositions) so definitely with certain sensory experiences that we do not become conscious of the gulf - logically unbridgeable - which separates the world of sensory experiences from the world of concepts and propositions (Einstein, 1944, p. 287).

As noted above, one of the most significant concepts that does not come from sensory experiences is the ability to "abstract." That is, to find a common bases for a collection of mental or physical events. This ability is required when many physical laws and theories are obtained. It is strongly required when combinations of physical laws, theories or properties are considered. Although distinct physical laws, theories or properties tend to use distinct languages this is not why there exists a unification U of any such distinct collection. It is only through abstraction that any such unification exists. Further, the (abstract) concepts utilized are not defined material entities and they also are not related, in any manner, to sensory experience.

As mentioned, physical laws are not "stated by Nature." They are human constructs that remarkably predict observed physical-behavior. Importantly, it is the consistency of U that yields the consistency of the Y′ *and not conversely. The languages we use to describe these laws do not appear as physical entities, but they are constructed by mankind. It is well after their construction that they are used to describe physical-behavior.* I know of no adequate evolutionary mechanism that can explain this correlation between created language and its future application to predict logically

observed physical-behavior.

> Hence, due to special (A″) and the U properties, I cannot argue, using any proposed evolutionary mechanism, that the special design represented by the (A″) method and the unification U is illusion. The (A″) method serves a specific purpose shared only by one collection of known creatures. The purpose is that rather ordinary human beings can apply the predicted (A″) statements, correlate these to physical entities and build our man-made universe. It appears that our universe and human beings are designed in a special manner that maintains this correspondence between language, mental abilities and physical-system behavior. There is no other known biological entity that has, on its own, established this remarkable correspondence.

What has been presented here is the major piece of a vast mosaic that indirectly establishes that an "higher-intelligence" has purposefully designed "all there was, all there is and all there ever will be." Although these results satisfy all the physical science rules for indirect evidence and the conclusions cannot be eliminated, they can be ignored.

8. Direct or Indirect Evidence.

Recall that "direct" means that the entities and relevant measures can be directly observed by human or recordable machine sensors, respectively. However, in general, there are various degrees as to what "direct" means. It first means "indirect" in that one can, but need not actually, make an observation. Relative to direct evidence not produced by a reliable machine, there are the usual problems that occur when only human observation is or was employed and the observation cannot be made again. This latter problem occurs with historical events or those "one-time" physical events that cannot or have not, as yet, been duplicated within a laboratory setting. The "first-reports" are the most reliable.

Documentary evidence has many degrees of reliability. The most significant first-reports are those attested to by individuals who have communicated the reported observations. An individual verifies that the statements are, indeed, those communicated. When such reports cannot be so verified they are, in general, less significant. In such cases, other verification methods may be acceptable. If an event being described cannot be repeated in an highly similar manner, then presuppositions are necessary. The most significant being that the communicated observation presents a factual description. Of course, there are numerous many reasons why an individual may not consider this a presupposition. On the other hand, other individuals do consider the belief in the factualness of a description as a presupposition.

Relative to documentary evidence one needs to have confidence in an individual's truthfulness and the actual unbiased ability to make a correct report of the events.

Obviously, these traits do not guarantee that a report is accurate. The more first-reports of the same event that satisfy observer criteria yield additional strength to the observation being described as an observed "fact." First-reports are descriptions and the accuracy of such a report depends on applying a "language" that clearly conveys the observation to others. If not exactly duplicable by a machine, then the transmission of a report via translation into another language or, over long periods of time, and having it duplicated or restated by others can be rather problematic. In such cases, considerable documentary analysis may be necessary.

Consider an hypothesis stated in a "scientific" language. If everything within the hypothesis is actually observable, then direct verification may be possible. Consider Galileo's law of fall, where Galileo specifically stated that his result contradicts Aristotle's. Indeed, Galileo gives one of the first, if not the first, description as to how his law can be (approximately) verified.

Taking his law of fall and using mathematical reasoning based upon a portion of the informal classical logic (i.e. ICL) the speed of a "falling" object is predicted. The portion of ICL used can be replaced by a general logic-system, which yields the same prediction using his law. The Galileo prediction is verified by comparing observed results with the predicted results. Then one states that "the prediction holds" or is "verified." But, is there something else of significance being verified?

Basically, a general logic-system is being verified. It's the general logic-system that yields a prediction. The prediction is "rationally" obtained. For the GID-model, the prediction is intelligently designed. After trillions and trillions and . . . of applications, the ICL does directly verify predictions for physical law statements. (However, recall that there are infinitely many general rules of inference that produce the same results as those obtained via ICL.) Some scientists consider ICL as a "universal" logic-system although certain behavior within quantum measure theory does not directly correspond to some basic ICL rules. But, ICL is used to produce the underlying theory itself. Hence, even if some behavior is not following ICL patterns, the behavior is being controlled, in a certain manner, by ICL. This is the same type of control exhibited by the GGU-model and all known scientific cosmologies. In the GGU-model, the general logic-system being used to produce all GGU-model results is ICL.

Any intelligent action associated with any general logic-system can, but need not, be interpreted as a restriction of an action that carries an higher-intelligence signature. Of course, for a specific physical hypothesis the assumption about ICL may not be correct in all cases. For, at least, two reasons, the hypotheses or even the logic employed need not be correct. (α) Other hypotheses, and ICL, may lead to the same predictions. (β) Or, the same hypotheses, and a different general logic-system can lead to the same predictions.

There can be no absolute "scientific" knowledge that hypotheses, which cannot

be observed, actually depict reality. This is especially due to (α) since many of the modern physical law statements are only indirectly verifiable. (α) forms the basis of many alternate theories. Importantly, for the GID-model interpretation, (β) is rather significant. *Although physical law statements and almost all scientific theories are based upon ICL, for a most perplexing aspect of physical-science, probabilistic behavior, the GID-model interpretation shows that an intelligent action, which is not characterized by ICL, guides and sustains the behavior. This intelligent action is an "higher" form of intelligence that cannot be "exactly" replicated by human actions.*

9. The Fundamental Universe-Generating Processes.

For the general GGU-model mechanisms that indirectly imply that an higher-intelligence uses intelligently design processes to generate ANY universe, please see the article raherrmann.com/processes.htm "Fundamental Universe-Generating Processes."

Special References.

Comparison article, raherrmann.com/compare.htm

Probability Models article, arxiv.org/pdf/quant-ph/0112037.

Processes article raherrmann.com/processes.htm and vixra.org/abs/1404.0421.

The unification of all physical theories is contained in the following: Herrmann, R. A., "General Logic-Systems and Finite Consequence Operators," Logica Universalis, 1(2006):201-208 or arxiv.org/pdf/math/0512559 "General Logic-Systems . . ." and Herrmann, R. A., "The best possible unification for any collection of physical theories," Internet. J. Math. and Math. Sci., 17(2004):861-721 Corollary 2.11 p. 864, or arxiv.org/abs/physics/0306147 "Best Possible . . ." and arxiv.org/abs/math/060357 Theorem 2.2. Then there is the example discussed in the chance.pdf file in raherrmann.com/chance.zip.

All of the mathematical "proofs" and modeling results needed to justify the above remarks are contained in various books, published journal articles or they are stored at the arXiv.org or viXra.org archives. They appear in the following stored versions and the references listed in each paper. vixra.org/abs/1308.0125 Paper 1, vixra.org/abs/1308.0145 Paper 2, vixra.org/abs/1309.0004 Paper 3, vixra.org/abs/1309.0013 Paper 4, vixra.org/abs/1404.0421 Paper 5, arxiv.org/abs/quant-ph/9909078 Paper 6. These papers may also appear in the zip file, raherrmann.com/bookmath.zip. The entire foundations for the mathematics is contained Herrmann, R. A. 1993 as listed below. It's best that you not concern yourself with the basic mathematics itself, due to its difficulty, until you grasp the **intuitive** basis for general intelligent design theory.

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