

Rational Methodology for Identifying Supernatural Intervention

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1. INTRODUCTION

The scientific process typically investigates the natural world by comparing observations from the observable world to predictions made by theories of the real world. Suppose the supernatural did cause an event that produced effects that were observed. Is it possible to rationally identify such effects as caused by the supernatural? This article proposes a rational approach by which to identify events that were caused by the supernatural. It also investigates some claims to the supernatural.

Clearly, almost all observed events appear to be caused by natural processes which follow governing principles that remain the same over time. These events have been studied extensively and scientists have developed well-tested theories that explain much of what we observe. Since natural causes are the most common, justification for claiming an event was caused by the supernatural requires showing that the event cannot be successfully explained by natural causes. Thus, one must first investigate if it is possible for natural processes to explain the event in question. If one can show that all-possible natural explanations are not plausible, then one has made the case that the supernatural has intervened.

As explained in Ref. 1, scientist typically go through a process of eliminating false hypothesis. According to proof by elimination "PE", if there is an all-natural theory that explains a certain real event and all other possible natural hypothesis for explaining that certain event are false except for one specific natural hypothesis, then this one remaining non-false natural hypothesis is the correct theory. The approach for identifying supernatural intervention proposed in my article makes use of this logical principle, by just extending it to the case where there is no plausible natural hypothesis. If there is a correct hypothesis and all possible natural hypothesis for explaining a certain real event are false, then there is a logical argument that the cause involves non-natural phenomenon; thus, the supernatural was involved with causing the event to occur.

For example, if someone dropped a dense rock and it fell according to the rules of gravity, then there would be no rational justification for being convinced the event involved supernatural intervention. However, if on the second time given every relevant natural condition essentially the same, the rock went up and down just on its own in midair, then one would have good reason to think that the supernatural had intervened.

The approach in this article is similar to Ref. 8 in that it uses PE. Ref. 8 focuses on the method for identifying design while this article focuses on the method for identifying supernatural intervention. Ref. 8 presents in a formal way the logic for the method while this article does not.

The supernatural or religion is most often pursued out of an interest of purpose, values and morals. If the supernatural did intervene and has a good purpose for humans, then it is natural to expect this supernatural intelligence would have some moral guidelines. Ethics and morals are very important; however, are not discussed in this article because they are not the focus of this article, but are discussed in Ref. 7.

2. VIOLATION OF DETERMINISTIC AND INDETERMINISTIC NATURAL PRINCIPLES.

Making a scientific case for some claim involves showing all possible hypothesis are false except for one. Thus, the scientific procedure involves determining what are all the possible hypothesis and collecting relevant data from observations to check if the data implies any of the possible hypothesis are false. Ref. 1 presents a more fuller explanation of the scientific approach. Once the deterministic and indeterministic natural principles are known, a check can be made if a real event violates them.

2.1 Violation of Deterministic Natural Principles

Deterministic principles are non-probabilistic mathematical or logical principles. Deterministic natural principles are the deterministic principles that govern natural reality and are constant through time. Since they are constant through time, deterministic principles produce phenomenon that have regularity. Since deterministic principles are precise, violations of deterministic natural principles make a definite case that the supernatural has intervened.

For example, suppose the planet Jupiter all of a sudden reversed its orbit direction around the sun while at the same time all the rest of the planets and the sun continued normally. According to present knowledge, such an event requires another mass which exerts a gravitational pull on Jupiter to cause such a change naturally. However, this mass would also affect the motion of the other planets; thus, this is a case which cannot be successfully explained naturally. If such an event occurred, there would be according to present knowledge a definite justification for claiming the supernatural caused it. However, just this information alone does not indicate the purpose of the supernatural. If this change in orbit placed Jupiter on a collision path with a huge asteroid that would have impacted and destroyed earth, then there would be justification for claiming that the goal of the supernatural intelligence was to preserve Earth in its present state.

Because devices for making observation are not perfectly precise or there are random variables involved with evaluating the data, indeterministic analysis are sometimes necessary to show rejection of deterministic principles. For example, in the case of planetary motion if the position of the planet over time could be plotted on the orbit predicted by the theory, then the difference between the actual and predicted would be the deviation. This deviation would be due to either the inaccuracy in the measuring device, due to the actual theory being wrong or some random variable that produced a perturbation about the theory. A probability distribution could be determined by statistic analysis of this deviation. An actual observation could then be assigned an individual probability based upon this probability distribution. It would be appropriate to use this individual probability as the "PA" in Section 2.2.2 to determine if the deterministic principle was violated. If the deterministic principle is definitely correct and was definitely violated, then definitely the supernatural has intervened.

2.2 Violation of Indeterministic Natural Principles

Indeterministic principles involve probability. The more improbable a hypothesis the stronger the case that it is implausible and should be eliminated as an explanation. The stronger the case that all natural hypothesis can be eliminated the stronger the case for supernatural intervention.

Indeterministic principles provide the basis for evaluating probabilities associated with the random part of the physical phenomenon governing the event or the data collection process. These indeterministic principles must appropriately account for any natural deterministic bias for the different outcomes. Thus, for the probability calculation to be objective and appropriate, an independent requirement must be met by verifying there is not any natural casual relationship between the actual outcome and some natural phenomenon that has a bias towards it. Thus, the probability calculation must properly

account for any deterministic bias for the possible outcomes, so the probability calculation is appropriately based on just the random phenomenon involved with the different possible outcomes which are permissible within the limits determined the governing deterministic principles.

Within the range of what is allowed by deterministic principles for certain conditions, there is typically many different possible outcomes. Each of the different outcomes has a certain probability of occurring. Substantiation for supernatural intervention based on violation of indeterministic principles involves showing that an actual outcome has a significantly low probability for occurring. This implies that there must be some special characteristic about the actual outcome that sets it apart as successful from the other outcomes that are not successful. This implies that there is some criterion that identifies characteristics that make certain outcomes successful while other outcomes are not. This criterion is referred to as the success criterion. The probability calculation is done by an objective analysis of this success criterion which specifies whether an outcome is successful or not.

The more narrow the range the success criterion allows the characteristics to be the more restrictive the success criterion. The more fundamental the success criterion requires the characteristics to be the more restrictive the success criterion. The more straight forward the interpretation process involved with the success criterion the more restrictive the success criterion. The probability for satisfying the success criterion should be proportionally increased as the number of opportunities for outcomes that satisfy the success criterion are increased by it being more lenient. The more the success criterion characteristics relate to that expected from a supernatural intelligence, the more restrictive the success criterion for defining outcomes that qualify as successful for identifying supernatural intervention. The following sections discusses what makes the success criterion valid and how to conservatively determine the number possible outcomes, successful outcomes and attempts so a conservative probability calculation can be correctly made.

2.2.1 Independent Requirement

The success criterion must be what Ref. 8 calls detachable from the event. This means that the success criterion must be independent of the event. If the success criterion is independent of the event, then it would be the same before and after the event it claims to be improbable. This restricts the creators of the success criterion so that they cannot contrive up successes that appears to be improbable, but are actually not improbable rather intentionally caused. For example, consider the case where a blind man was shooting arrows against a mountain side. Whenever the blind man's arrow landed a contriver could then place a target so that the arrow was exactly on the bulls eye and then claim the blind man was amazingly successful. In this case the placement of the target was dependant upon where the arrow landed. Thus, the criterion was dependant upon the event; therefore, the criterion would not qualify as independent.

The success criterion cannot be tailored to the event based upon knowledge about deterministic or indeterministic principles that govern the event or based on knowledge about the event after it occurred. This means that the characteristics of the outcomes that make them special are characteristics that are independent of the event. Therefore, the success criterion would be based on concepts that are independent of the event.

Often claims to the supernatural are made by just claiming an actual outcome was a special outcome without defining some independent success criterion that this actual outcome falls within. A independent success criterion needs to be specified in order to do an objective probability analysis of the claim.

2.2.2 Conservative Probability Calculation

Determining the probability of satisfying the success criterion involves determining the probability for satisfying the success criterion on one attempt and determining the number of attempts. The evaluation of each of these items should be done conservatively so that the estimated probability is not lower than the actual. This means that the probability estimate for each of the parameters in the probability calculation should be done in a way that maximizes the calculated probability. If a conservative approach for calculating a probability is not used, then the probability will be suspect because the actual probability may be higher than that estimated.

The formula below show the factors that need to be incorporated into a conservative probability estimate. In order for these simple formulas to be conservative on average the probability of all possible outcomes must be greater than the average probability of any of the successful outcomes. Even the equation is conservative because as the number of attempts increase the actual probability asymptotes to 1 rather than remaining linear and extending over 1 as this equation predicts. Thus, any calculated probability greater than 1 should be considered as essentially 1. The equation is fairly accurate for calculated probabilities < 0.10.

$$P = 1 - (1 - PA)^N = \text{approximately } N * PA \text{ for } P < 0.1, \quad PA = S / A$$

P: Conservative estimate of probability for satisfying success criterion

N: Conservative estimate of number of attempts for satisfying success criterion

PA: Conservative estimate of probability for satisfying success criterion in one attempt

S: Conservative estimate of the number of possible outcomes that satisfy success criterion

A: Conservative estimate of the total number of possible outcomes

A conservative estimate for "S" requires determining the maximum number of possible outcomes that satisfy the success criterion. There are many different characteristics that increase the number of outcomes that satisfy the success criterion. For example, loose interpretations or vague terms allow for more successful outcomes which increases the number of outcomes which satisfy the success criterion. Every interpretation or definition of success for satisfying the success criterion that is as or more straight forward than the interpretation or definition of success that is used to determine an actual outcome as satisfying the success criterion should be used in determining the total number of possible outcomes that satisfy the success criterion. For example, suppose a prophet claimed that a major disaster would strike the United States during the year 2000. This prediction makes no specific designation of what major or disaster means so many different events could qualify making successful fulfillment actually quite probable.

A conservative estimate for "A" requires determining the minimum for the total number of possible outcomes. The success criterion typically defines characteristics of the outcomes that it designates as satisfying the success criterion.

A conservative estimate for "N" requires determining the maximum number of attempts. The total number of cases where the success criterion could be satisfied anywhere in the universe throughout the whole life of the universe should be used as a conservative estimate for "N". Just about every person makes at some time a prediction of the future or plays games of chance. Considering that there are billions of people who make over a lifetime perhaps thousands of predictions and play many games of chance, it is probable that there will be many successful outcomes whose single attempt probability, "PA" is quite small. These many number of attempts in the range of at least trillions need to be conservatively accounted for when estimating probabilities from the results of common people doing common things involving chance. However, the success criterion could limit the number of people considered. Ref. 8 determined that throughout the universe life about 10^{150} atomic events have occurred. Thus, for atomic events the number of attempts should be considered around 10^{150} .

The probability for success is proportionally increased as the number of opportunities for outcomes satisfying the success criterion is increased. This approach allows successful outcomes to be found which is fair, but applies an appropriate increase in probability for how lenient the success criterion is made to make an actual outcome satisfy it.

The greater freedom to find a match the greater the increase in probability to find a successful match. In other words, the greater freedom to interpret what a successful match is the greater the increase in probability to find a match. Thus, the freedoms to find a match must be quantified in a conservative and objective way so that in the probability calculation factors that are proportional to these freedoms are included.

2.2.3 Multiple Evidence for Convergence

If there are several events that support the same conclusion then the combination of them makes a stronger case than the case considered by them individually. A combination of remarkable arguments could result in a strong argument. A combination of strong arguments could result in a compelling argument. Multiple data supporting the same conclusion is known as convergence. To verify that the supernatural caused the convergence, it needs to be shown that the different events are essentially independent naturally and that it is unlikely or impossible that ordinary phenomenon could have caused the apparent convergence.

For factors that are dependent, if a mathematical formula that conservatively estimates their dependent relationship could be formulated, then the set of dependent equations could be solved to conservatively determine the probability for the combination of the dependent parameters. If this cannot be done, then if just the probability of the factor that is associated with the most fundamental cause was included in the probability calculation, then it would be certain that the probability calculation would not have any unconservatism due to dependent relations between the different parameters. If the probabilities are independent, then they can just be multiplied together.

With multiple evidence the probability calculation is more complicated and can require Bayes equations. Bayes equation considers both positive and negative evidence and the potential of all the other possible explanations. A good explanation of Bayes equations and an example of how to use it can be found in Ref. 13.

2.2.4 Types of success Criterion

This section describes characteristics of different types of success criterion. The characteristics of these different types have features that could potentially meet the requirements listed in the previous sections.

2.2.4.1 Levels of Success for Repeated Random Actions

In random actions which are repeated, each of the outcomes of the individual actions is supposedly independent of the previous action. For example, the outcome of a dice role is supposedly independent of the previous rolls. Thus, defining an outcome as special because it matches the previous outcome would meet the independent requirement. For example, it would be appropriate to associate a low probability with a unbiased dice that kept rolling the same number.

In cases of repeated random actions the appropriate probability to associate with them is the level of success probability. This is the probability for achieving a certain percent success rate or higher. This section explains how to calculate the probability for a certain level of success occurring by chance through random selection of variables whose different possibilities are all equal. For example, the 6 different possibilities of a unbiased die each have equal probabilities. The probability of rolling a six on one try is 1/6. The probability of rolling two sixes in a row is $(1/6)^2=1/36$. Calculating the probability for a getting a mix of success and failures is more complicated and requires the formulas below.

X_i : Number of different possible individual outcomes for ith condition

N_i : Number of attempts for ith condition

S_i : Number of successes for ith condition

F_i : Number of failures for ith condition (N_i-S_i)

ith condition: Condition where one specific outcome out of X_i possibilities occurs S_i times out of N_i tries

L_i : Total number of possible outcomes that satisfy ith condition

M_i : Total number of possible outcomes in complete set determined X_i, N_i

P_i : Probability for satisfying the ith condition

$C(A,B)$: number of combinations for a given number of items; A: number of items; B: number of items in each combination. $C(A,B) = A! / (B! * (A-B)!)$ where $N! = 1 * 2 * 3 * \dots * N$

$$L_i = (X_i - 1)^{F_i} * C(N_i, F_i)$$

$$M_i = X_i^{N_i}$$

$$P_i = L_i / M_i \quad (\text{assumes each different possibility of } X_i \text{ has equal probability of occurring})$$

P_i is fundamentally a function of X_i, N_i and F_i .

For example, consider condition 1 ($i=1$) the case where rolling an unbiased die 6 times; thus, $N_1=6$. An unbiased dice has 6 different equally probable possibilities; thus, $X_1=6$. The probability of getting a success rate of exactly 50% or rolling 3 sixes ($S_1=3$) is calculated below.

$$L_3 = (6-1)^3 * C(6,3) = 2500, \quad M_1 = 6^6 = 46656, \quad P_1 = L_1 / M_1 = 2500/46656 = 0.054$$

$$L_1 = (6-1)^3 * C(6,5) = 18750, \quad M_1 = 6^6 = 46656, \quad P_1 = L_1 / M_1 = 18750/46656 = 0.402$$

$$L_0 = (6-1)^3 * C(6,6) = 15625, \quad M_0 = 6^6 = 46656, \quad P_0 = L_0 / M_0 = 15625/46656 = 0.335$$

Thus; there is a probability of 0.054 or a chance of 1 in 18.7 that one would roll 3 sixes in 6 tries. This is a low number as expected.

To ensure that the calculated probability is conservative, and accurate for relating to the conclusion one is trying to support, the probability for the level of success (PS) should be determined. Meeting a certain percent success requirement is obtained by achieving the certain percentage or higher. For example, with dice a 50% level of success means that at least 50% of the rolls were sixes. Thus, rolling 3, 4, 5 or 6 sixes out of 6 tries would each qualify as achieving a 50% level of success. The probability for meeting a certain percent success is determined by summing up the probabilities for all the possibilities that have at least the designated level of success. The sum of the probabilities for rolling 3, 4, 5 or 6 sixes out of 6 tries is 0.062. The sum is shown by the cumulative curves in Figure 1 and the formula for calculating the probability for a certain level of success is listed in the following equation. The success percentage is calculated by the following formula S_i/N_i where $S_i=N_i-F_i$. The sums starts with summing the values with no failures up to the values with the maximum amount of failure that are still considered successful.

$$PS_i = \sum_{F_{im}=0}^{F_{im}=F_i} P_i(X_i, N_i, F_{im}) \quad \text{If } S_i = 1 \text{ then } PS_i = 1 - (1 - 1/X_i)^{N_i} \quad \text{Chance that 1 or more would occur by random. } 1 -$$

this value is the chance that none occurred by random.

The probability distribution curve in Figure 1 shows relative probabilities versus percent successful (S_1/N_1) of the different possibilities for the different conditions labeled in the graph. Percent failed (F_1) would be $1-(S_1/N_1)$. These curves were calculated using the formulas above and normalized so that the area under the curve is equal to one so that the sum of the probabilities for all possibilities is equal to one. Notice that that as the number of tries increases the more unlikely it is to get a high percentage of success. In other words, the more times one rolls the dice, the less likely a high total percentage of rolled sixes would occur.

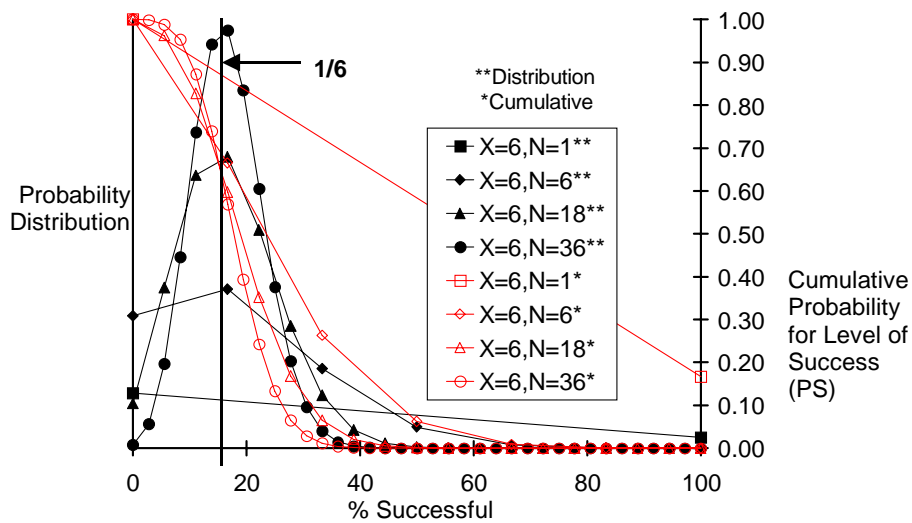


Figure 1 Probability Diagram for X=6.

The formula for determining the total probability (PT) for a mix of conditions (n different ones) is listed below. Mixed conditions are where there are variables involved with different X values such as the case where one is rolling dice (X1=6 different possibilities for a dice) and also tossing of coins (X2=2 possibilities for a coin). For example, the formula below could be used to determine the total probability (PT) for rolling at least 2 (S1=2) sixes out of 3 (N1=3) tries and tossing at least 3 (S2=3) heads out of 4 (N2=4) tries. The formula below calculates a probability of 0.023 for achieving this level of success.

$$PT = \sum_{F1m=0}^{F1m=F1} \sum_{F2m=0}^{F2m=F2} \dots \sum_{Fnm=0}^{Fnm=Fn} PTn \quad \text{where } PTn = P1(X1, N1, F1m) * P2(X2, N2, F2m) \dots Pn(Xn, Nn, Fnm)$$

$$PTn = \text{or } PT = PS1 * PS2 \quad \text{if independent}$$

2.2.4.2 Special Characteristics based on Pattern Matching of Discrete Variable

An actual outcome could have unique characteristics that identifies it with some other real item or special abstract concept. An actual pattern matching some other pattern could be a way that an actual outcome is identified with some other real item or special abstract concept. For example, it could be that randomly dropped pebbles formed a circle or square which are abstract concepts. Or perhaps these pebbles formed the shape of a perimeter of some real lake or spelled out some real person's name.

Within the range of what is allowed by deterministic principles for certain conditions, there is typically many different possible patterns. Each of the different patterns has a certain probability of occurring. Substantiation for supernatural intervention based on violation of indeterministic principles involves showing that the actual pattern that occurred has a significantly low probability for occurring. For the probability calculation to apply, the independence requirement mentioned in Section 2.2 must be met by verifying there is not any natural casual relationship between the actual pattern and some natural phenomenon that has a bias towards it's pattern. The probability calculation involves two parts. The probability calculation should conservatively account for the number of patterns the success criterion would allow to be matched. For the just previously mentioned examples, the success criterion should account for at least the number of geometrical shapes, lake perimeters or people's names allowed to be matched. This is accounted for by the "SP" term in the probability calculation below. The success criterion should also account for how well the actual pattern matches the pattern it is compared to. The stricter the matching requirement of the success criterion the fewer actual patterns defined successful. This is accounted for by the "SM" term in the probability calculation below. The conservative probability estimate for one attempt at pattern matching is listed below. The guidelines for evaluating the success criterion listed in Section 2.2 and 2.2.2 should apply in determining the numbers in the probability calculation. The actual probability for pattern matching is determined by putting the "PA" value from the equation below into the equation for "P" in Section 2.2.2.

$$PA = SP * SM / A$$

PA: Conservative estimate of probability for satisfying success criterion in one attempt

SP: Conservative estimate of the number of patterns the success criterion considers as matching a special pattern

SM: Conservative estimate of the number of possible patterns the success criterion allows to match one of the special patterns

A: Conservative estimate of the total number of possible patterns

Natural intelligence cannot observe the future; thus, there are certain things about the future that natural intelligent cannot predict. Predictions of the future (prophecy) where no natural intelligence was involved with the prediction are independent; thus, it would be appropriate to evaluate the success criterion for the prophecy. Thus, in such cases if the prediction was successful, it would be appropriate to consider the prediction for identifying outcomes that it predicted as successful in doing a probability evaluation. Ref. 4.1.2.2.1 presents an example of an analysis of a prophecy according to the method proposed in this article.

2.2.4.4 Multiple Guesses involving Continuous Variable

A: Actual value

N: Number of guesses in order of increasing value.

X_M : Value of guess M

dX_{b_M} : Interval before guess M

dX_{e_M} : Interval after guess M

Dx_{C_M} : Difference between guess M and actual value $X_M - A$

dX_{b_i}

2.2.5 Implausible Probability Range

The natural world does consistently follow indeterministic principles. For example, the 2nd law of thermodynamics which applies to all natural phenomenon is based upon indeterministic principles. Most always scientific analysis uses probability and statistics. This article defines the probability cut-off value for eliminating hypothesis as a plausible explanation the implausible probability cut-off (IP). An objective way to determine a lower probability threshold is to consider the Figure 3 plot. The Figure 3 plot relates the hypothesis rejection probability (Pr) to the number of resulting hypothesis determined true by PE (N_T). N_C is the number of contradictions between all the hypothesis determined true. The Figure 3 plot is produced by an unbiased use of all observations of the real world and the objective application of all scientific criterion such as PE. Any observations that are definitely candidates for being caused by natural intelligence should be excluded from the analysis that produces the Figure 3 plot.

If a moderate but still to high probability is used for rejecting hypothesis then not necessarily false hypothesis are determined false resulting in incorrect hypothesis inadvertently being determined true through PE. In such cases it is possible for there to be contradictions (N_C) between these incorrect hypothesis. As Pr approaches 1.0 all hypothesis for indeterministic phenomenon will be determined false, including the correct hypothesis, resulting in ultimately no hypothesis being determined true for indeterministic phenomenon. The rejection probability (Pr_C) which is low enough so that there are no contradictions between any hypothesis determined true is considered as the objective probability threshold for determining hypothesis false. The more objective criterion and observations that are used in the analysis the produces that Figure 3 plot, the more hypothesis will be determined true resulting in more objective basis for Pr_C being a probability threshold for determining hypothesis false (IP). I do not think any scientist has done such an analysis so I do not have such a number to use for defining my lowest probability range for rejecting natural hypothesis so I just use an even range that is consistently 0.01 proportion of the higher values.

Objective use of Pr_C for rejecting natural hypothesis requires that all information such as observations and criterion used to determine the Figure 3 plot should be appropriately and conservatively considered in every term in the probability equation in Section 2.2.2. If all the appropriate scientific criterion and observation were used, then use of Pr_C would be objective because fundamentally it is derived from the requirement for no contradictions, is unbiased and in a conservative way uses all scientific information available.

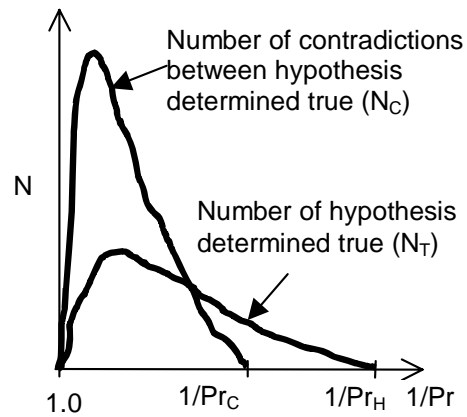


Figure 3. Plot relating rejection probability (Pr) to number of hypothesis determined true (N_T) and resulting contradictions (N_C).

I consider probabilities for "P" defined in Section 2.2.2 less than 0.000001 compelling. Natural solutions containing such probabilities I consider definitely implausible. For example, as a juror if I was presented credible DNA evidence which indicated a probability of 0.000001 for the accused not being guilty, then I would feel compelled to issue a guilty verdict. Probabilities in the range of 0.000001-0.0001 for all natural hypothesis I consider as strong evidence for the supernatural. Natural solutions containing such probabilities are considered weak. Probabilities in the range of 0.0001-0.01 for all possible natural hypothesis I consider as remarkable evidence for the supernatural. Natural solutions containing such probabilities are considered poor. Probabilities in the range of 0.01-0.1 for all possible I consider just interesting and there is no significant rational reason to doubt natural solutions involving such probabilities. Probabilities greater than 0.10 are not even interesting.

I have not directly derived these probability ranges; however, I have explained an objective way to derive such probabilities and conservatively related them to probabilities that scientist commonly use.

2.3 Summary

Figure 4 summarizes the logic flow presented in this article for identifying the type of cause for a real event. Figure 4 shows how the different natural possibilities could be eliminated resulting in proving through PE that supernatural intervention was involved with a real event.

The pathways which are just "yes" or "no" cannot be crossed unless there is a definite "yes" or "no" answer. If the analysis of the real event results in getting stuck in a diamond juncture, then presently there is no basis to proceed further; thus, no further definite conclusion about the type of cause can be made. However, with new additional information or analysis there may eventually be a basis to proceed further. Thus, anytime there is new information about natural indeterministic or deterministic principles or natural intelligence the evaluation should be done again starting at the top.

To determine through PE (Ref. 1), if an event was caused by just a natural deterministic cause, a natural governing principle that is constant through time needs to be identified as the cause of the event. A definite "No" to natural deterministic cause means it is certain that there is no natural deterministic bias for the actual outcome; thus, appropriate to consider the plausibility of it occurring by random; therefore, it is appropriate to do a probabilistic analysis of the event. If the probability is low enough, then the indeterministic cause is eliminated and the one natural explanation left is natural intelligence. Since one cannot get into the mind of all the people that could have caused the event, direct evidence is not required for proving the cause was by natural intelligence, just the possibility of natural intelligence causing the event. If natural intelligence could not have caused it, then PE implies the non-natural was involved or the supernatural intervened.

If the event violates a natural deterministic principle, then it is automatically determined that the supernatural intervened. However, the violation of the natural deterministic principle must be definitely determined. This is accomplished by proving that no other natural deterministic cause could have caused the apparent violation of the natural deterministic principle.

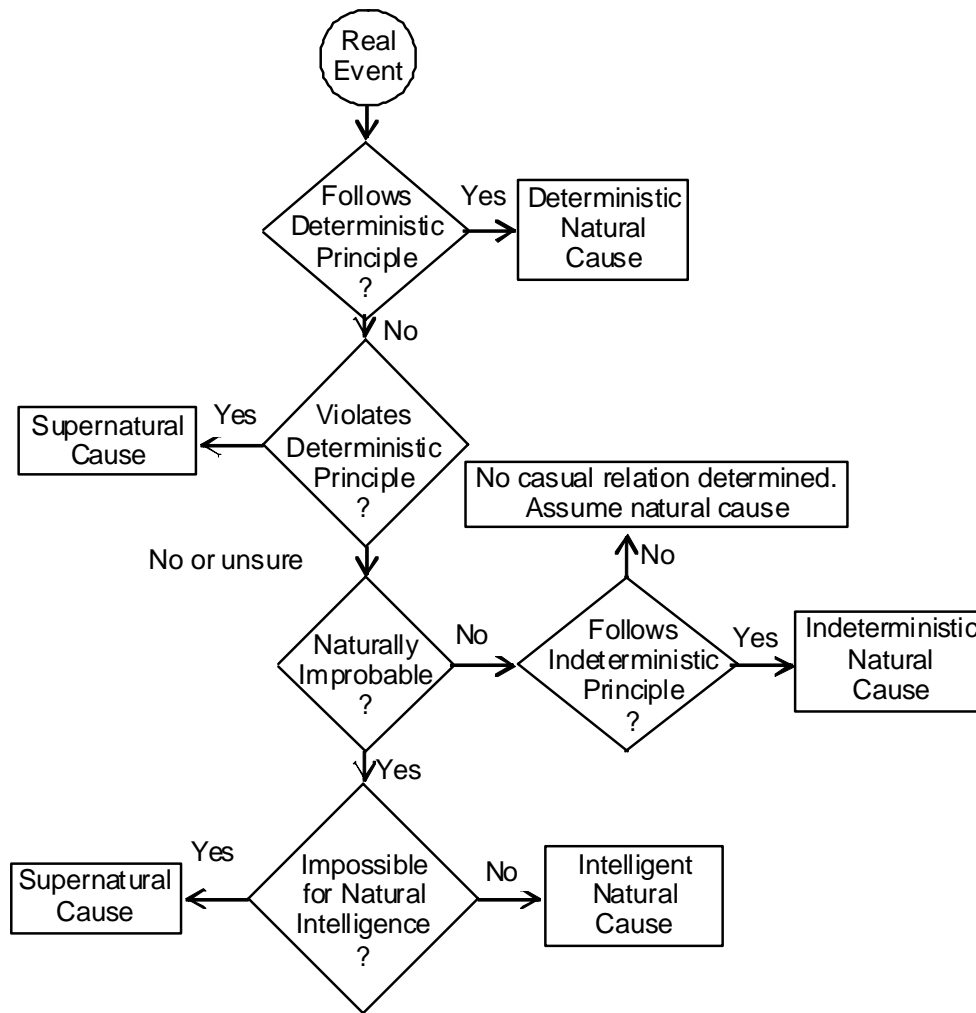


Figure 4. Logic Flow for Identifying Type of Cause for Real Event.

If the following requirements are met, and the logic flow in Figure 4 determines the cause is supernatural then it should be impossible for new information from natural reality to indicate that supernatural conclusion is wrong.

- Natural reality is self-consistent and is not irrational
- PE is used as explained in Ref. 1 to determine natural deterministic principles
- Probability calculations are done correctly and conservatively with a low enough probability threshold
- The capability of natural intelligence is properly evaluated

The rationale in this article provides an appropriate basis to reject or show false claims that there is a remarkable, strong or compelling argument as defined in Section 2.2.5 for the intervention of the supernatural. Thus, this approach provides an appropriate basis to critic claims for the supernatural. The approach is falsifiable and uses the key logical principle in science, PE; therefore, the approach presented in this article for identifying the intervention of the supernatural deserves to be considered as scientific.

2.4 Practical Approach

Even if there actually is evidence for the supernatural, there can be an enormous amount of effort involved with determining all natural hypothesis nonetheless rule them all out. Scientist have developed a lot of criterion that they have found successful for determining hypothesis false or true. Often the reasoning for the criterion is not complete logic such as reasoning using PE, but the reasoning comes close to ruling out all possible hypothesis and uses rational unbiased principles. For such cases, the substantiation should be called practical scientific reasoning rather than a logical proof. While use of such criterion reduces the argument from being completely logical, at least it is unbiased to use them for establishing a supernatural claim, because the criterion were substantiated in just natural investigations. General criterion 4-7 and specific criterion 1-5 in Ref. 1 are examples of such practical criterion that scientist have found successful, but do not necessarily meet the PE requirements.

Many well accepted scientific principles are not completely proven logically, but still quite accurate. Even though these deterministic principles are not completely correct, if there is evidence of an event that falls outside their reasonable range,

this evidence should still be considered as violating a natural deterministic principles implying the intervention of the supernatural. For example, the Newtonian deterministic principle of gravity is not completely proven logically; however, a reasonable range of events governed by gravity can be defined by it and violations identified as explained in Section 2.5.2.

2.5 Evaluating All Possible Hypothesis

The method proposed in this article involves determining all possible natural hypothesis false. This can be a big if not impossible challenge. To accomplish this goal, the effort involved with determining all possible natural hypothesis has to be finite. In some cases the effort may be finite in other cases it may not be. The number of possible hypothesis depends upon that physical phenomenon involved with the claim being made. To substantiate a claim by PE first all the possible hypothesis need to be determined. Thus, there needs to be some objective systematic procedure that has a logical basis by which all the possible hypothesis are determined. If characteristics of the physical phenomenon being evaluated can be related to logical concepts, then the logical evaluation of these concepts may be able to determine all the possible hypothesis. Once all the possible hypothesis are determined, all except for one need to be shown false, then there is proof by PE that this one non-false hypothesis is the correct one.

2.5.1 Discrete Phenomenon

Discrete phenomenon compared to continuous phenomenon have more potential for there to be a finite effort involved with determining all their possible explanations, because for just continuous phenomenon, the features required to be explained can always be multiplied by dividing the phenomenon further.

This paragraph is an example of how a discrete physical item related to the logic of geometry provides a simple example where the number possibilities is finite. Consider the question of how many 1.0 inch cubes are in a 10.0-inch cubic box. When the 10.0-inch cubic box is packed in the most efficient way, exactly 10^3 1.0 inch cubes fit. This is the maximum possible amount of 1.0 cubes that could fit in this box; thus, the total number of possible hypothesis for 1.0 inch cubes in a 10.0-inch cubic box is 1001 because 0 is also counted.

For discrete phenomenon where the question is how many of a certain items exist, all the possibilities are all the positive integers, including 0. This is based on logic because it is based on the mathematical concept of the complete number sequence of possible integers. To prove how many of that item exist, the procedure is to eliminate every positive integer (including 0) except for a certain single integer. For example, the number of large moons orbiting earth involves a discrete phenomenon. There are either 0, 1, 2, 3, ... I think it is possible to rule out the hypothesis that there are 2 or more because they would definitely be observed. It is evident there is at least one, thus, PE determines there actually is only one. In this example, there is an infinite number of possible discrete phenomenon; however, it took only a finite amount of reasoning to dismiss the infinite amount by ruling out all numbers greater than a certain value. Thus, just because there is an infinite amount of possibilities does not necessarily mean that it takes an infinite amount of knowledge or effort to rule out all but one.

Reasonable assumptions can be made that limit the number of possibilities to a finite number. For example, if your car is seen being driving away, it can be assumed if this is a natural phenomenon that a human is driving it away or there is a remote control device in the car. If you just thoroughly check the car and found no remote control device, then if it occurred naturally, one could assume a human was driving it away. Since the number of humans is finite, the number of possible thieves is finite. In this case to determine the actual individual who stole the car, one would have to show that all other humans except for a certain one was driving the stolen car. If it can be shown no human was in the car and since there is no remote control device, PE would indicate the supernatural intervened.

Information comes in discrete bytes; thus, parts of reality such as DNA sequences, written or spoken language, etc... can be modeled as finite discrete bytes of information from which there is the possibility through objectively analysis to evaluate through a finite effort all possibilities involved with the information modeled. Ref. 12 described how information theory can be used to evaluate the DNA & protein sequences in biology.

2.5.2 Reasonable Ranges for Continuous Phenomenon

For continuous phenomenon, the number of possible hypothesis is always infinite because the features required to be explained can always be multiplied by dividing the phenomenon further. For example, the subatomic particle features could always be divided further requiring more to be explained. I doubt if it is possible to determine all the possible hypothesis to explain the fundamental governing principles of matter and energy. However, science has determined quite a few governing principles for continuous phenomenon; for example, Maxwell's equations for electromagnetism, Newton's laws for gravity and motion, conservation of mass and energy, etc.. While these governing principles may not be completely correct, I think science has in many cases gotten close enough to discovering the true theory that justifies claims that observations of continuous phenomenon should at least fall within a certain range.

Gravity involves the continuous motion of mass. Newton's gravity law is not perfectly correct, but for practical use on the macroscopic level there is much one can conclude. In the above discrete moon example one can rule out there are other large moons because based on Newtonian gravity their effects would be observed, but they are not. The relativity refinement of gravity is not needed to determine this.

Suppose the planet Jupiter all of a sudden reversed its orbit direction around the sun while at the same time all the rest of the planets and the sun continued normally. According to present knowledge, such an event requires another mass which exerts a gravitational pull on Jupiter to cause such a change naturally. However, this mass would also affect the motion of the other planets; thus, this is a case which cannot be successfully explained by gravity. If such an event occurred, there would be according to present knowledge a definite justification for claiming that gravity did not cause it, implying no natural explanation.

2.5.3 Categories involving multiple hypothesis

Some claims involve a categorized characteristic that does not require specifying all the details and the categories defined cover all the possible hypothesis. For a specific example, the common biological ancestor issue could be limited to just the questions of whether certain species either share a common ancestor or they do not. In this case, there are just two possible categories, the species either shared a common ancestor or they do not. This question could be evaluated and possibly determine one of these two categories false implying the other true without specifically determining the correct evolution or creation scenario. There are a very large number of different possible evolution or creation scenarios that would fall into these two categories. Ref. 9 uses this reasoning to make the case that humans and other mammal species share a common ancestor.

2.5.4 General Elimination of Deterministic Causes

Most of the serious arguments for actual supernatural intervention involve claiming no deterministic principle has a bias toward the actual outcome and the probability of the actual outcome is low. Key for the substantiation of such arguments is proving no deterministic principle has a bias toward the actual outcome.

There are phenomenon that are inherently indeterministic. For example, an unbiased dice has no bias towards any side, but every time it rolls it ends up landing on one certain side. If the claim about the phenomenon just involves the results of some inherently indeterministic phenomenon, then generally eliminating deterministic biases is straight forward and it would be appropriate to do the probability calculation. If the phenomenon involved with the claim is not inherently indeterministic, then there may be a mix of indeterministic and deterministic effects. In order for the probability analysis to be relevant one has to ensure that there is no deterministic bias not properly accounted for in the probability analysis. It can be a very difficult task to verify there is no deterministic effect not properly account for. Indeterministic parts of the problem can be isolated and evaluated; however, solving the whole problem that involves a mix of indeterministic and deterministic effects can be a difficult task because the correct probability analysis can be quite complex.

2.6 Assumptions about the Supernatural

To develop more specific predictions for supernatural claims, assumptions about the supernatural intelligence have to be made. Assuming the intelligence has a plan and purpose is appropriate because intelligence gives one the capability to do so. It is possible to develop predictions from the assumption that the intelligence always remains consistent with a certain plan or purpose.

If the assumptions do not have the supernatural intelligence doing anything that violates natural principals, then no specific testable predictions will be made.

An appropriate assumption for the supernatural intelligence is this intelligence interest in being truthful and would not deceptive. Thus, as a creator, the supernatural intelligence would not go through extra unnecessary effort to create a physical item in a way that makes it appear as if it was not created. Thus, any solution that would have God doing extra unnecessary supernatural intervention (not mentioned in the sacred religious book) to make it appear that God did not supernaturally intervene in a way that is claimed in the sacred religious book, I consider unsatisfactory because such an ad-hoc solution has God appearing to deceive which is not consistent with the truthful nature that God is often assumed to have. This article refers to this assumption as the no deception requirement. For example, claiming that God began the universe thousands of years ago and extended the light out from distant stars to make it just appear to have traveled for billions of year rather than thousands, would have God doing extra unnecessary supernatural intervention (not explicitly mentioned in Genesis) to just make the universe appear billions of years old. The leading Christian philosopher Francis Schaeffer agrees with this too. In "No final conflict" he rejects the idea, "that God created the fossils in the earth in order to fool fools. This is totally out of character with the God of the Bible." The creation of the fossils has God doing extra unnecessary supernatural intervention (not mentioned in Genesis) to make it appear that God did not super naturally intervene as described by a certain interpretation of Genesis.

If a creation science approach is truly scientific it must be able to potentially be shown wrong or falsifiable. This application of the no deception requirement to fundamental creation is the most objective one that puts limits on what fundamental creation predictions are considered acceptable. If this constraint does not apply to a fundamental creation theory then the approach is free to be unfalsifiable; thus, would not pass the falsifiable requirement; therefore, should not be considered scientific.

If enough evidence about the supernatural was collected than it may be possible to eliminate all purposes for the supernatural except for one, then through PE the purpose of the supernatural could be determined rather than by assuming it.

If the supernatural intervention is due to an intelligence, it is natural to expect it to have a purpose or goal. For supernatural intervention evidence to support the existence of a specific supernatural intelligence, the supernatural intervention must be consistent with a purpose of this supernatural intelligence. If the supernatural event performs a certain function that would not be accomplished if the supernatural intervention did not occur, then there is justification for claiming that the result of that function was the goal or purpose of the supernatural agent. If the event performs a certain function that acts in conjunction with others to perform a certain function, then there is also justification for claiming that the result of that function was the goal or purpose of the supernatural agent. For example, since life is something very unique and may be unique for the complete universe, the example in Section 2.1 of Jupiter saving Earth from the asteroid presents a strong case that the supernatural has a goal in preserving life on Earth. If the supernatural intervention produces a message such as "JOHN", then obviously the purpose is to communicate a message.

2.7 Response to Criticism

Much of the criticism about supernatural claims is warranted. However, this article has explained how supernatural claims can be substantiated in a valid way. This section attempts to respond to criticism of the valid approach not the invalid approaches.

Determining all possible natural hypothesis nonetheless ruling them all out is a big challenge and it is questionable if it has ever been accomplished. However, before assuming it has never been accomplished, first one should consider that there are certain types of phenomenon which have a finite limit of possible explanations. If characteristics of the physical phenomenon being evaluated can be related to logical concepts, then the logical evaluation of these concepts could determine all the possible hypothesis as shown by hypothetical examples in Section 2.5.1. Section 2.5.1 explains that discrete phenomenon can have a finite number of explanation and even when there is an infinite amount of possibilities it is still possible in some cases for a finite effort to deal with all the possibilities. Section 2.5.2 explains for continuous phenomenon supernatural intervention could be implied when the phenomenon are outside of the reasonable range of some well-proven natural governing principle. Also, section 2.5.3 explains that a finite number of categories of hypothesis may be identified which could allow for a general conclusion to be made without determining the specific correct hypothesis. If the phenomenon is inherently essentially completely indeterministic, then according to Section 2.5.4 there can be justification for general elimination of deterministic natural explanations.

Critics claim that one can never rule out all the possible explanation because there may always be some unknown explanation. Thus, critics claim arguments for the supernatural or intelligent design always have a fatal weakness due to the possible lack of knowledge of some actual plausible all-natural explanation. In most cases, the scientist cannot evaluate all the possible hypothesis, so there certainly are many cases where supernatural or intelligent design are arguments from ignorance. However, section 2.5 has explained how there can be cases where all possible hypothesis can be evaluated and section 2.5.1 gives actual hypothetical examples. Thus, arguments for the supernatural or intelligent design could consider all possible hypothesis; thus, are not necessarily arguments from ignorance. In fact no human has such complete knowledge to substantiate that there can be no claim where all possible explanation cannot be evaluated. Thus, valid criticism would be specific about identify cases where all possible explanation cannot be evaluated. To claim in general that it is impossible for any supernatural or intelligent design claim to not be an argument from ignorance, is just another argument from ignorance.

Another complaint made about the approach of those making supernatural claims is that their approach does not make any predictions; thus; is not falsifiable or testable. The most fundamental use of the PE approach does make any assumption aside from the presupposition that there is a correct theory for explaining the reality being investigated and that reality follows the law of no contradiction. If these presuppositions, proven natural principals and a set of observation imply through the correct application of appropriate rational criterion that the supernatural intervened, then the supernatural has been substantiated without any specific predictions. Thus, specific predictions about the supernatural may not be necessary to infer supernatural intervention. Also, as mentioned in Section 2.6, assumptions about the supernatural can be made from which specific falsifiable predictions could be developed. The approach proposed in this article is falsifiable. According to the approach proposed in this article by just showing there is just one plausible possible natural hypothesis a specific claim that there is proof for supernatural intervention is falsified.

The approach proposed in the article is not erroneous, but correct because it is based upon PE in the same straight forward way that science attempts to use PE. Thus, if PE does not have the potential to imply supernatural intervention as proposed in this article, then PE does not apply in general which would means there is no logical basis for determining anything true scientifically.

Some critics claim since supernatural intervention is not humanly repeatable, it cannot be evaluated scientifically. Ability to repeat is very helpful because it allows for more testing of the theory, however, just because some phenomenon cannot be repeated does not mean it is impossible to scientifically verify a theory about the phenomenon. Scientific analysis is often applied to unrepeatable historical events such as in astronomy, archaeology, forensic science, etc... For example, the

big bang occurred once within the life of our universe; however, there is plenty of scientific reasoning that indicates it is true by evaluating its after effects. The after effects of the supernatural could also be evaluated and if there is definitely no natural plausible explanation, then PE implies the supernatural intervened.

There is a legitimate debate concerning probability calculations. However, the probability approach proposed in this article is conservative to ensure the calculated probabilities are not underestimated. Scientific evaluations most always involve probability calculations or estimates. Scientific theories are supposed to be falsifiable; thus, if an analytical tool involving probability is scientific, then it should have the potential to show a low probability for natural hypothesis implying the hypothesis is implausible. If all natural hypothesis are implausible, then PE implies the supernatural has intervened. Thus, those that claim that PE has no potential to substantiate claims about intelligent design or the supernatural, imply the scientific probability tools do not really have the potential to imply all natural hypothesis false. Thus, they are just making an artificial invincible defense to protect their naturalistic presuppositionalism just like many theists build artificial invincible defenses to protect their theistic presuppositionalism. See Section 5.4 of Ref. 1 for a description of presuppositionalism and their associated artificial invincible defenses.

Just as natural scientist should be given every opportunity to find a natural explanation, so should those who are interested in finding a rationale for a meaningful explanation for humans, be given every opportunity to find the intervention of the supernatural. However, the search for the supernatural should still follow an appropriate rationale.

3. RELEVANT FIELDS

The most relevant field for humans is naturally their own origins, present purpose and ultimate destiny. Thus, it is natural to investigate if there is evidence that the supernatural was involved in causing the universe and life to exist as it does. Religions are also of interest because they typically claim that there is a supernatural intelligence that created humans for a purpose.

3.1 Origins of Religions

Most religions claim that they have some sort of revelation or message from God, the supreme supernatural being. These revelations are listed in their sacred books which the religions typically claim were written by human authors somehow inspired by the supernatural. These claims can be checked by investigating if they could be explained by just the natural. In the following paragraphs I list my approach for this investigation.

3.1.1 Supernatural Inspiration & Credibility

If there is supernatural evidence that supports a specific claim in a sacred book, then there is support for the supernatural credibility of the human author of that specific sacred book. If a specific claim is supported by supernatural evidence, then the more a concept of the sacred book relates to this specific claim the more its supernatural credibility is supported. Supernatural evidence for one author of a sacred book does not mean supernatural credibility for all authors of that sacred book. However, if an author whose supernatural credibility has been established, claims credibility to another author then this other author's supernatural credibility is supported. Negative evidence such as contradictions or evidence that supernatural claims were concocted up weakens the supernatural credibility of a claim or author of the sacred book. If a specific author has negative evidence, then the more a sacred book credibility is based upon that author the more its supernatural credibility is weakened. If a specific claim has negative evidence then any concept that requires that claim to be true has the same problem. A contradiction cannot be explained as a revelation from God, because God is typically considered to not error. However, an error in a sacred book does not exclude the possibility that there is evidence for the supernatural in that sacred book. A sacred book could be a combination of inspiration from God and inspiration from the ordinary human author. On the other hand, a sacred book having remarkable or even compelling supernatural evidence does not make the whole sacred book inerrant.

If an author of a book was directly inspired by God then one would expect the author to claim within that book that God provided revelation. If the supernatural intelligence is consistent, then if there is purpose that can be identified with the supernatural intervention of that supernatural intelligence, then that purpose should be consistent with any other purpose that can be identified with any other supernatural intervention of that supernatural intelligence. Any plan or purpose of God would not be illogical. It is my hope that God's plans and purposes are good.

The authors of the sacred book are typically part of the religious movements; thus, have the potential to be motivated to concoct up stories or theology that supports their religious views. This should also be considered when investigating the credibility of the sacred books. For example, testimony which includes self-supporting theology is subject to possible motivation. However, theological motivation does not necessarily mean the author is not trustworthy, especially when the theology is not self-serving. If the author is unreliable, then typically the author should be able to be shown unreliable based upon the typical tests for historical reliability.

Critics have worked extensively to develop natural explanations for the origins of different religions. The best theories of these critics should be considered in order to determine if there is a successful natural explanation for the origin of any religion.

3.1.2 Credibility of Natural Historical Setting

This section discusses the approach for evaluating the reliability of historical settings presented in a sacred books. Many of the sacred books describe ordinary historical settings within which the supernatural events or revelations are recorded. The same techniques (Ref. 2) used by historians to determine the historical credibility of the non-religious records should also be used in evaluating the credibility of the historical settings presented in the sacred books.

The more the natural historical setting presented in the sacred book is consistent with the historical reconstruction determined true by the appropriate historical criterion, then the more the sacred book's credibility is supported. The more the historical setting presented in the sacred book is inconsistent with the historical reconstruction determined true by the appropriate historical criterion, then the more the sacred book's credibility is weakened.

3.1.3 Credibility of Supernatural Claims

Probability calculations for the hypothesis which includes the supernatural cannot be made for results that are the direct effects of the supernatural. Thus, when considering the probability of supernatural hypothesis, the probability analysis should not involve determining the probability of the direct result from the supernatural intervention. Only the secondary effects of the supernatural on the natural can be evaluated. For example, there is no basis for determining the probability of the supernatural causing a miracle such as a miraculous global flood. However, there can be a rationale basis for calculating the probability of observable data naturally occurring after such an event like certain geological features resulting.

If an effect that would occur if the supernatural intervened as claimed is not observed, then the credibility of the supernatural claim is weakened. The higher the probability for observing such an effect if it did exist, the greater the credibility of the supernatural claim is weakened when the effect is actually not observed. For example, if it is highly probable for there to be salt layers in the polar ice cap due to a global flood, then the credibility of the miraculous global flood claim would be weakened if no such salt layer was observed.

As explained in Section 2.2, the lower the probability for the best all-natural explanation of an actually observed apparent result of supernatural intervention, the more the credibility for the supernatural claim is strengthened. For example, consider that several presumably independent eyewitnesses reporting that they all saw an Angel at the same time in a similar region wearing a purple robe, had a yellow hat and was flying to the North. Assuming they were independent eyewitnesses, in other words they did not form a conspiracy, it is very improbable that they would all report the same thing. Thus, the all-natural explanation would have a low probability which would strengthen the credibility of the supernatural claim of the eyewitnesses.

3.2 Origins of Biology

The basic function of life is to self-replicate. Evolution is the best explanation for the natural origin of the complex biological organisms. If this level of complexity was achieved naturally it would have to be by relatively very small steps at a time because this maximizes the probability of occurrence. In many cases there are many possible pathways that life could evolve from one stage to the next; thus, the conservative assumptions used to determine the probability of evolution need to cover all of the potential pathways. Evolutionists have worked extensively to develop natural explanations for the origins of life. The best natural theories proposed by these evolutionist should be accurately consider in order to determine if there is a successful natural explanation for the origin of any life form.

Archaeological studies can determine whether or not a stone or artifact was made by an intelligent human or just developed naturally. Just as in archeology it is possible to use science to determine if there is evidence in biology for an intelligent designer biology. Futuyma, a leading evolutionist states in ref. 3, "Creation and Evolution, between them, exhaust the possible explanations for the origin of living things. Organisms either appeared on the earth fully developed or they did not. If they did not, they must have developed from preexisting species by some process of modification. If they did appear in a fully developed state, they must indeed have been created by some omnipotent intelligence". Scientific theories are supposed to be falsifiable (4) and evolution is the only plausible natural theory for the development of complex features in life that have integrated interdependent components that are needed to perform a function as a whole and appear irreducibly complex. Therefore, if the theory of the evolution of these complex features is a scientific theory, then it should also be possible to approach creationism scientifically. In other words, if there is an analytical tool the can show an evolution scenario plausible, then it should also be able to show scenarios are implausible by natural means. If all possible natural pathways according to the natural deterministic and indeterministic principles can be shown implausible, then according to PE there is a definite case for supernatural intervention.

The common argument for supernatural intervention in the origin of biology is that the origin of a certain life form has a very low probability even considering the deterministic effects of natural selection in the past. Arguments of this type are generally discussed in Section 2.5.4. Evolution involves a mix of indeterministic effects (random mutations) and deterministic effects (natural selection). The probability calculation must properly consider the possible effects of natural selection. All possible plausible pathways need to be properly considered in the indeterministic analysis.

A big challenge for natural evolution is the development of apparently irreducibly complex biological features because components would have to come together properly at one time. However, there may be pathways where one component at

a time is developed; thus, apparent irreducible complexity is not necessarily actual irreducible complexity. Thus, identifying apparently irreducibly complex biological features without showing all possible evolution pathways are implausible is just an identification of a biological candidate for design. All possible evolution pathways need to be shown implausible in order for their to be a proof of biological design.

The protein is the most basic component that performs a function. It's region of functional equivalence is apparently a very small range of all possible sequences. If more than one protein function is required to perform a certain function beneficial for life, the probability decreases exponentially that the coding for all components would form at the same time within the germ cell of the life form. Also, the functional requirement is more specific for each of the components because they must compliment each other in order to perform the function as a whole. For example, assuming that the cytochrome C functional equivalence ratio is in general representative of the order of magnitude of functional equivalence for most protein functions, the odds for two different specific protein functions obtained by random would be $(2.00 \times 10^{-44})^2 = 4.00 \times 10^{-88}$ [12]. There are possible unconservative and conservative factors in the relevance of this calculation. For example, there may be many different ways different protein families that compliment each other to perform the same function as a whole. However, it is questionable if consideration of them would significantly increase this very small number to the point where it is plausible to expect to obtain at the same time in the same germ cell by mutations two novel protein function that complemented each other to perform a certain function as a whole. Ref. 12 states, "Since the probability of a mutational event is a number much smaller than unity, simultaneous events are of the second order, i.e. extremely rare, and may be neglected." Thus, plausibility of theories that require two or more novel protein functions to come together at the same time and compliment each other to perform a function as a whole that benefits the life form is questionable.

3.3 Origins of Human Thinking

The apparent free will of humans is difficult to explain naturally because the deterministic cannot cause such a phenomenon. If there is no free will then the good ethics of humans are ultimately not caused by their choice, but a result of the impersonal natural principles and chance. Even theistic or atheistic beliefs of humans would not be their choice.

Humans in general have a strong interest in the purpose for things even in cases where there is no apparent value for survival are passing on of genes. The impersonal deterministic natural laws have no interest in purpose. As pointed out by the leading evolutionist, Dawkins (Ref. 153), there is no purposeful goal in evolution,

"All appearances to the contrary, the only watchmaker in nature is the blind forces of physics, albeit deployed in a very special way. ... Natural selection, the blind, unconscious, automatic process which Darwin discovered, and which we now know is the explanation for the existence and apparently purposeful form of all life, has no purpose in mind. It has no mind and no mind's eye. It does not plan for the future. It has no vision, no foresight, no sight at all. It can be said to play the role of the blind watch maker."

In the evolution process, fundamentally the direct cause for new information is mutations or mistakes in the DNA copying process. According to the theory of evolution, if some impersonal molecule did not randomly interfere with the DNA replication of some past creature's (i.e. single cell bacteria or ancient ape) DNA, then humans most likely would have never come into existence. If evolution and the natural impersonal laws did exclusively produce humans, then the good morals that both atheist and theist have are just a matter of chance and very likely would be completely different if some other impersonal molecule interfered with the past DNA replication process. In other words, ultimately there would be no good purpose behind the good morals that atheists and theists do have, rather they were just obtained by accident.

These facts make it evident that it is difficult to completely explain human thinking on the sole basis of natural processes. Also, these facts imply that ethics cannot be rationally derived from just naturalism as pointed out by the leading evolutionist Stephen Gould (6), "(natural) Science as an enterprise is a discipline that deals with the factual state of the (natural) world, and you don't derive ethical beliefs from factual statements (of the natural world). The most (natural) science can do is to supply information that may be relevant to ethical decisions, but it is never going to tell you what proper behavior is. It just can't." Added comments in () by Steve Hinrichs.

4. ACTUAL CLAIMS

There are billions of people who have made many predictions based on random guess (needs to be differentiated from predictions based upon intelligent analysis) or have been involved with activities that involve random results such as games of chance. Considering all the many claims common people have made is extensive and needs to be considered conservatively because of the many attempts. The focus of this article is if there is a supernatural intelligence that has intervened, so for practical purposes, just the actual claims from the major religions are presented in this article. If the supernatural has intervened with a purpose, then it is natural to expect it to be for some purpose for humans, the one life form that stands out with a strong interest in purpose. Religions deal with this question of whether a supernatural intelligence has a purpose for humans; thus, it is natural to investigate if there is evidence within religions for the intervention of the supernatural.

Religion is most often pursued out of an interest of purpose, values and morals. If the supernatural did intervene and has a good purpose for humans, then it is natural to expect this supernatural intelligence would have some moral

guidelines. Ethics and morals are very important; however, are not discussed in this article because they are not the focus of this article, but are discussed in Ref. 7.

4.1 Religions

Most of my study of religions has been focused on the sacred books of Judaism and Christianity; however, I have read much of the sacred books from other religions. In this section I list the best evidences for the supernatural that I have discovered from the different major religions. I do not claim this section to be comprehensive. I do hope who ever reads this article would send me recommendation that would add to the items I list below that would qualify according to the criterion in Section 2 so that the best arguments for the supernatural can be listed in this Section. Also, if readers can make improvements to the criterion in Section 2, I would appreciate being informed. Constructive criticism of the criterion in this article should not undermine the capability of natural science to be falsifiable. Claiming that there is no rationale for identifying the intervention of the supernatural implies there is no rational way to falsify a claim that only the natural has occurred. A constructive critic of a criterion involves presenting an improved version with an explanation why the improved criterion is better.

A fair evaluation of any issue involves hearing out the best arguments from the different positions as is theoretically done in the courtroom. Thus, the best criticisms of the supernatural claims are given. In addition, some of the relationships between the different religions are pointed out.

General Reference

1. *Sacred Texts of the World*, Smart, N., Hecht, R.C., Crossroad Publishing Company, 1982. The book gives an excellent coverage of much of the key points of different religions by selecting out key texts from their sacred books. It covers many religions and provides summaries of each.

4.1.1 Mormonism

The most remarkable observation that I am aware of in the Mormon sacred books is in Doctrine & Covenants #87 where Joseph Smith predicts in 1832 that a rebellion would begin in South Carolina. This prediction was repeated in D&C #130 by Joseph Smith in 1843. The Civil war did start by a Rebel attack on Fort Sumter in South Carolina. Considering that there were 11 slave states the probability could be estimated as $1/11=0.091$. This interesting claim directly points to Joseph Smith, but not directly to a theological conclusion of Mormon sacred scriptures. This prediction could have been produced by natural intelligence, because there are reasons to expect the rebellion to begin in S. Carolina rather than the other states. For example, in 1832 Joseph Smith would have been aware that President Andrew Jackson had alerted the nation's troops in response to S. Carolina's declaring a traffic act null and void.

4.1.1.1 Sacred Books

1. *Doctrines and Covenants*, written by Joseph Smith. Much of this book contains guidelines for the Mormon community. It also contains theology and doctrines written by Joseph Smith.
2. *The Book of Mormon*, written by Joseph Smith, According to Joseph Smith he received this revelation in 1823 when the resurrected Moroni visited him and brought plates that Moroni had sealed up in 421 AD. According to Joseph Smith these plates contain the record of the ancient Hebrews who came over to the Americas. The Jaredites came over about the time of the Tower of Babel listed in the book Genesis in the Bible. The Lamanites and Nephites came over in 600 BC. After many years they were destroyed except for the Lamanites who are the principle ancestors of the American Indians.

Much of the Mormon scriptures have a relationship to the Christian New Testament which is related to the Jewish Tanak or Christian Old Testament.

4.1.1.2 References Supporting Supernatural Claims

4.1.1.3 References Critical of Supernatural Claims

4.1.2 Christianity

The most remarkable single observation that I am aware of in the Christian sacred books is in the Old Testament passage of Daniel 9:25 where the coming time of the Messiah is predicted. Based upon the conservative method for calculating a probability for success, Ref. 4.1.2.2.1 determined a probability of at most 0.00356. This result points to the author of Daniel and to a theological conclusion of Christianity that Jesus is the Divine Messiah. Ref. 4.1.2.2.1 also presents the best of criticism for this claim. Other claims for the supernatural evidence can be found in Ref. 4.1.2.2.2. Christianity claims it is a fulfillment of Old Testament prophecy.

4.1.2.1 Sacred Books

1. *New Testament*, 27 books. The first four present the life of Jesus. Half of the rest are letters claimed to be written by the most prominent Christian theologian, Paul. The rest are letters claimed to be written by other Christians leaders who claim to have known Jesus.
2. *Old Testament*, 39 books, First five are claimed to be written by Moses and contain the law. 12 of the books are categorized as historical. 14 are categorized as prophets which focus on an message presented by the author of the book, and do include predictions made by these prophets. 5 others are categorized as poetry and wisdom writings. The Christian Old Testament contains most all of the same books as the Jewish sacred book, the Tanak.

4.1.2.2 References Supporting Supernatural Claims

1. Hinrichs, S.C., Daniel's Messiah in the Critic's Den, <http://home.roadrunner.com/~rrr33/critic7.pdf>
2. Hinrichs, S.C., Apologetic Summary for the Bible, <http://home.roadrunner.com/~rrr33/ratsrch.pdf>

4.1.2.3 References Critical of Supernatural Claims

The Secular Web, <http://www.infidels.org/library/modern/>

4.1.3 Judaism

The Christian Old Testament is almost identical to the Jewish sacred book, the Tanak. Thus, information on the Old Testament in Section 4.1.2 is applicable to Judaism. Typically the Jewish religion rejects the claims of the Christian New Testament.

4.1.4 Hinduism

I am not aware of any evidence from the Hindu scriptures for the supernatural according to the criterion in Section 2.

4.1.4.1 Sacred Books

1. *Bhagavad Gita*, This book claims to contain an actual discussion between Arjuna and the Hindu God, Krishna. The discussion takes place just before a battle is about to begin. Arjuna wonders if it is right to fight which brings up a lot of philosophical issues which the two discuss.
2. *Vedas*, There are four collections; *Rgveda* which comprises lyric hymns to various deities, *Samaveda* which comprises hymns from the Rgveda arranged in reference to the Soma sacrifice, *Yajurveda* which contains sacrificial prayers for a number of domestic and public rituals, *Atharvaveda* which mostly contains magical spells and incantations.
3. *Brahmanas*- books of ritual and prayer. They were later than the Vedas and sought to relate the hymns of the Vedas to the actual ritual processes and practices.
4. *Upanisads*- discusses the nature of the world soul.

4.1.4.2 References Supporting Supernatural Claims

4.1.4.3 References Critical of Supernatural Claims

The Secular Web, <http://www.infidels.org/library/modern/>

4.1.5 Buddhism

According to the most ancient Buddhist sect, Theravada Buddhism, the original Buddha, Siddhartha Gautama (560BC) never claimed divinity or claimed there was a divinity. According to the Buddhist scripture, Majjhima Nikaya Lesser Malunkhyutta Sutta, it is not known whether there is an afterlife for humans.

I am not aware of any evidence from the Buddhist scriptures for the supernatural according to the criterion in Section 2.

4.1.5.1 Sacred Books

1. *Pali Canon*- A large collection of about 45 volumes. They are broken into 3 collections; *Sutta*- discourses of the Buddha, *Vinaya*- disciplines of the Buddha, *Abhidhamma*- Analysis of the Buddha

4.1.5.2 References Supporting Supernatural Claims

4.1.5.3 References Critical of Supernatural Claims

The Secular Web, <http://www.infidels.org/library/modern/>

4.1.6 Islam

The Quran does mention that there are clear proofs from God (Ref. Surah VII, The Elevated Places, verse 203). Mohammed did make prophecies that his army would win the battle they were about to enter (Ref. Surah LIV, The Cow, verse 45). His troops did win the battle. In order for this fulfilled prophecy to satisfy the criterion for supernatural evidence it needs to be conservatively shown that the probability for Mohammed's troops to win this battle is low. In addition, even if a battle is expected to be lost, most always the general in charge still proclaims that the battle will be won. The Quran does accept some of the supernatural claims of the New and Old Testament such as Jesus was born as a virgin (Ref. Surah XXI, The Prophets verse 91) and Old Testament claims such as those involved with Noah and Moses.

4.1.6.1 Sacred Book

1. *Quran*- The Quran, written by Islam's prophet Muhammad (650AD), is the one main book of the Muslim religion. Much (~1/4) of the Quran discusses lessons learned from the Old Testament characters such as Abraham, Noah and Moses. Much of it discusses the importance of focusing one's belief on the one God, Allah which according to Mohammed is the God of Abraham. Much of the rest discusses morale principles Muslims are to follow.

4.1.6.2 References Supporting Supernatural Claims

4.1.6.3 References Critical of Supernatural Claims

The Secular Web, <http://www.infidels.org/library/modern/>

4.2 Biology

Ref. 4.2.1.1 claims to show that it is implausible for a DNA based self-replicating cell to form naturally from basic components. Ref. 4.2.1.1 does consider some of the best natural explanations.

4.2.1 References Supporting Supernatural Claims

1. Serious Difficulties for Abiogenesis, Hinrichs, S., <http://home.roadrunner.com/~rrr33/abiopb.pdf>
2. Creation links in <http://home.roadrunner.com/~rrr33/homepage.htm>

4.2.2 References Critical of Supernatural Claims

Evolution links in <http://home.roadrunner.com/~rrr33/homepage.htm>

4.3 Cosmology

There are quite a few features of cosmology that appear quite improbable and provide a required environment for life (Ref. 4.3.1). There appears to be only one path by which this can be obtained, by the universe initially expanding at a certain rate as explained in Ref. 4.3.1. The remarkable point is that the expansion rate cannot differ by more than one part in 10^{55} from the actual rate. In addition, the expanding universe traces back to a singular origin when all the matter and energy appeared in space-time. This appears to violate the deterministic principle of the conservation of mass-energy which means mass-energy does not naturally originate out of nothing. Some physicist claim this is not a problem because they claim the total mass-energy of the universe is actually zero because they claim that total of the kinetic and potential energy sums to zero.

4.3.1 References Supporting Supernatural Claims

1. Universal Design, Hinrichs, S., <http://home.roadrunner.com/~rrr33/universe.htm>

4.3.2 References Critical of Supernatural Claims

5. CONCLUSION

By use of the logical principle, PE, this article presents a rationale for identifying supernatural intervention by requiring showing that the natural cannot successfully explain the event in question. This means that the event violates deterministic or indeterministic natural theories and cannot be explained by natural intelligence. Violation of deterministic principles present, a clear case that the supernatural has intervened. Violation of indeterministic is not necessarily definite. The strength of the argument depends upon how small the probability is for the best natural explanation. This probability should be determined by a conservative analysis.

Because of the strong desire humans have for purpose, it is natural to investigate if there is evidence that indicates if a supernatural intelligence has a purpose for humans. Religions typically claim there is, so the methodology provided in this article provides a rational basis to investigate their supernatural claims and others. If claims for the intervention of the supernatural can be shown to be successfully explained naturally, then there is no rational basis for claiming the supernatural has intervened.

The approach presented in this article uses PE a key logical principle used in science. The approach provides a basis to critic and potentially dismiss claims because it puts a priority on the natural explanation if it is successful and requires probability estimates to be conservative; thus, the approach is falsifiable; therefore, deserves being considered as scientific.

The strongest case from nature known by the author comes from the cosmological arguments in Section 4.3. The strongest case from religion known by the author comes from Section 4.1.2.

6. REFERENCES

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